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Of Chemists and Chemical Engineers

Analysis of the
American Chemical Society's
Survey of Graduates in
Chemistry and Chemical Engineering

1989

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1989 SURVEY REPORT

STARTING SALARIES AND EMPLOYMENT STATUS OF

CHEMISTRY AND CHEMICAL ENGINEERING GRADUATES

American Chemical Society
1155 Sixteenth Street, N.W.
Washington, D.C. 20036

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ACKNOWLEDGMENTS

Each year, at the direction of its Joint Board-Council Committee on Economic Status, the American Chemical Society (ACS) surveys recent chemistry and chemical engineering graduates to determine trends in starting salaries and employment status. This report presents detailed results of the 1989 Starting Salary Survey. A summary of the survey findings was published in the October 23 issue of *Chemical & Engineering News*.

Joan Burrelli, Seryu Patel, and Alicia McGinnis of the ACS Market and Business Analysis Department conducted this year's survey and prepared this report. Dr. Burrelli wrote the summary and comment on the following pages.

Robert K. Neuman, Special Assistant to the Director,
Membership Division

SUMMARY OF FINDINGS

SALARIES

Salaries for inexperienced BS chemists and chemical engineers increased moderately in 1989. The mean starting salary for inexperienced BS chemists was $23,167 in 1989, compared with $21,743 in 1988. The mean starting salary for inexperienced BS chemical engineers was $32,223 in 1989, compared with $29,821 in 1988.

Table 1 shows average starting salaries paid to inexperienced chemistry graduates for 1988 and 1989, and gives additional information concerning the variation among individual salaries within each group. Table 2 presents corresponding information for chemical engineering graduates. The trends in median starting salaries from 1980 to the present for inexperienced chemists and chemical engineers are shown in Figures 1 and 2.

For inexperienced chemists (those with less than 12 months of experience), 1989 mean starting salaries were:

$23,167 for the	BS,	up	6.5%,	or in constant dollars	up	1.7%
$29,863 for the	MS,	up	10.5%,	or in constant dollars	up	5.4%
$38,782 for the	PhD,	up	4.9%,	or in constant dollars	up	0.1%

Chemical engineers continue to receive larger starting salaries than do chemists with similar degrees. Among chemical engineers, the 1989 mean starting salaries were:

$32,223 for the	BS,	up	8.1%,	or in constant dollars	up	3.1%
$35,697 for the	MS,	up	7.7%,	or in constant dollars	up	2.7%
$45,802 for the	PhD,	up	9.4%,	or in constant dollars	up	4.4%

The Consumer Price Index rose 4.8% from August 1988 to August 1989.

POST-GRADUATION EMPLOYMENT STATUS

Unemployment rates for chemistry and chemical engineering graduates at all degree levels were lower in 1989 than in 1988. Unemployment this year among bachelor's chemists and chemical engineers was the lowest it has been throughout the 1980s.

The recent history for unemployment rates of recent bachelor's graduates is:

	1989	1988	1987	1986	1985	1984	1983	1982	1981
Chemical Engineering	5%	8%	16%	21%	22%	24%	42%	26%	8%
Chemistry	10%	11%	13%	13%	23%	27%	31%	21%	23%

New chemical engineering graduates are generally subject to higher unemployment and more pronounced swings in unemployment rates than are new chemistry graduates. The decline in unemployment this year and last indicates increased demand for new chemists and particularly for new chemical engineers.

Table 1

STARTING YEARLY SALARIES
OF INEXPERIENCED FULL-TIME EMPLOYED
CHEMISTRY GRADUATES

by Degree: 1988 and 1989

Salaries	DEGREE LEVEL					
	Bachelor's		Master's		Ph.D.	
	1988	1989	1988	1989	1988	1989
90th Percentile	$27,500	$29,200	$33,000	$36,200	$44,100	$46,100
75th Percentile	25,400	27,000	31,000	33,000	42,500	44,000
50th Percentile	21,900	23,000	27,700	30,300	40,500	42,000
25th Percentile	18,000	19,600	23,400	26,000	30,000	35,500
10th Percentile	16,000	17,500	21,000	21,300	23,000	26,000
Mean	21,743	23,167	27,023	29,863	36,961	38,782
Count	322	318	64	79	148	150
Standard Deviation	4,520	5,033	5,864	5,986	8,901	8,343

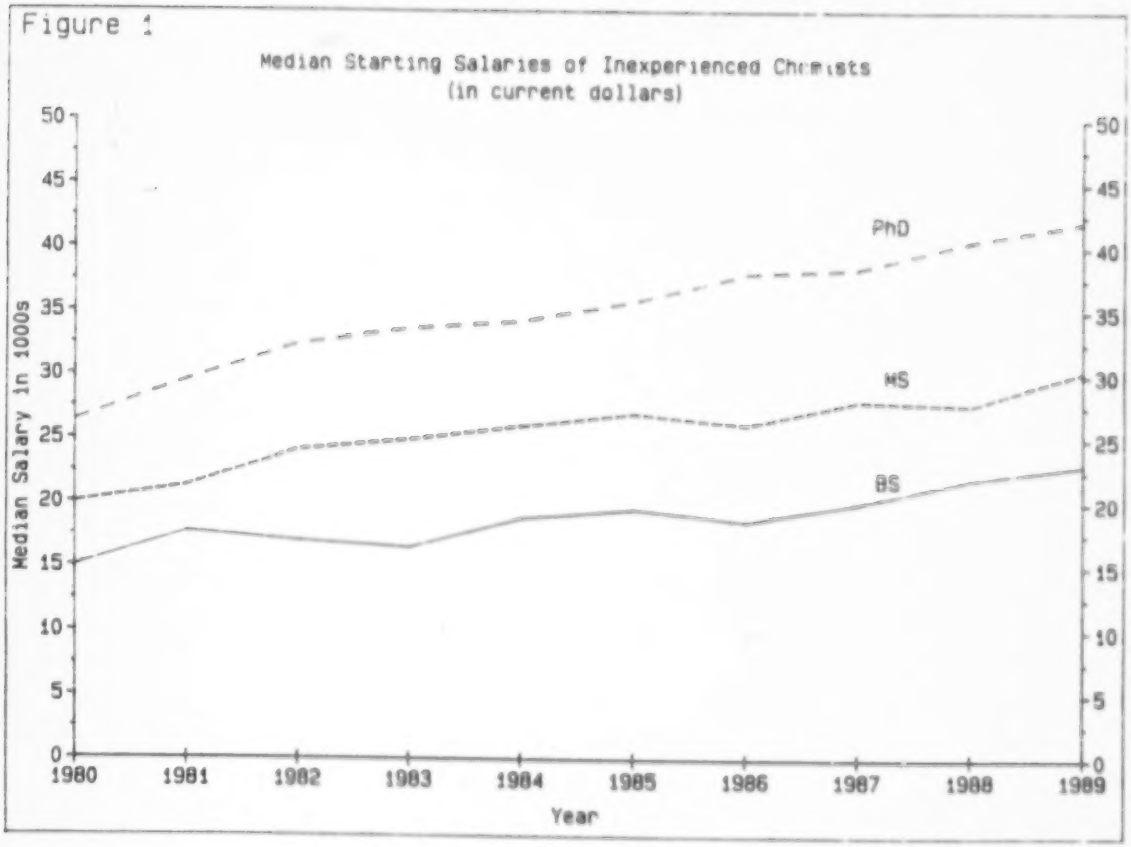
able 2

STARTING YEARLY SALARIES
OF INEXPERIENCED FULL-TIME EMPLOYED
CHEMICAL ENGINEERING GRADUATES

by Degree: 1988 and 1989

alaries	DEGREE LEVEL					
	Bachelor's		Master's		Ph.D.	
	1988	1989	1988	1989	1988	1989
0th Percentile	$32,500	$35,000	$38,000	$39,000	$48,000	$50,100
5th Percentile	31,800	33,800	34,400	38,000	46,000	49,000
0th Percentile	31,000	33,000	33,000	36,000	44,400	47,000
5th Percentile	29,000	31,800	32,000	34,800	40,000	43,150
0th Percentile	25,000	28,800	28,000	32,000	31,200	40,000
ean	29,821	32,223	33,152	35,697	41,877	45,802
ount	311	378	33	63	58	72
tandard Deviation	3,370	3,208	4,065	4,300	7,102	4,704

Figure 1

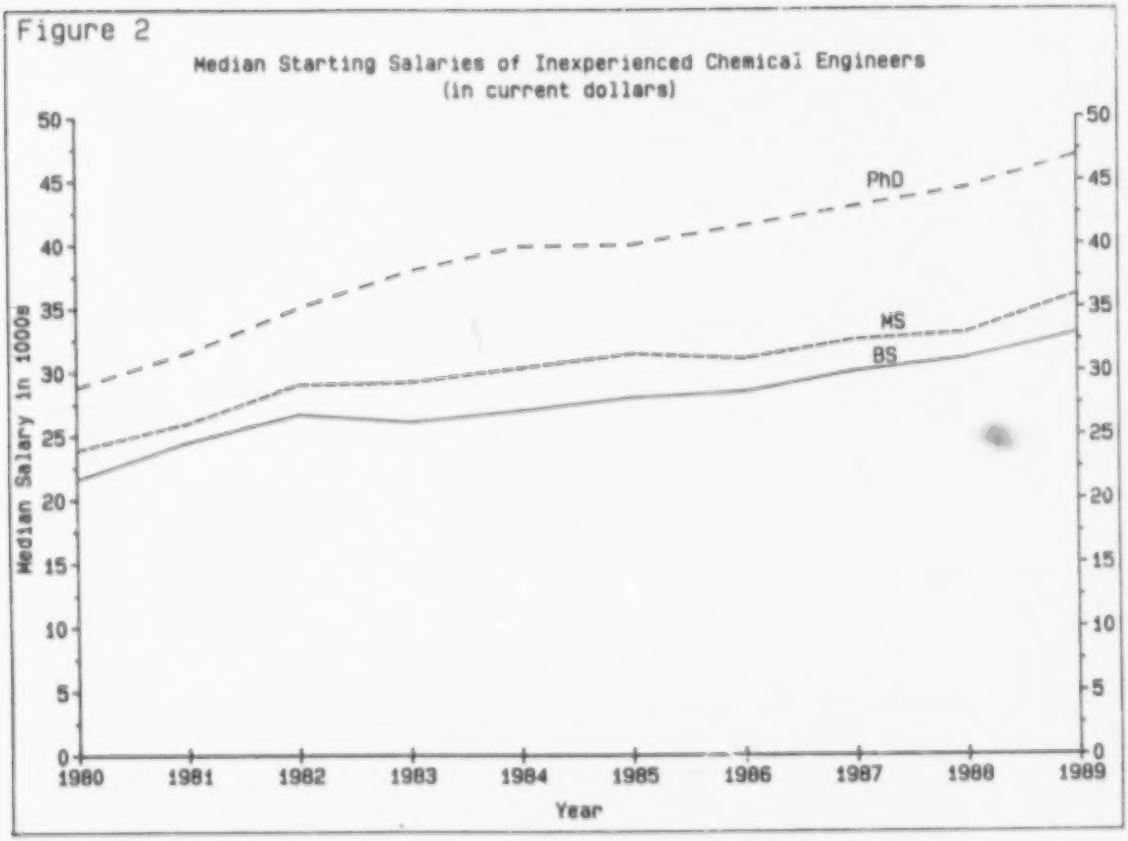


Median Starting Salaries of Inexperienced Chemists*
(in current dollars)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
BS	$15.0	$17.7	$17.0	$16.5	$18.8	$19.5	$18.6	$20.0	$21.9	$23.0
MS	20.0	21.3	24.1	24.9	26.0	27.0	26.1	28.0	27.7	30.3
PhD	26.4	29.5	32.4	33.6	34.2	35.8	38.0	38.4	40.5	42.0

*Base annual salary in thousands of dollars.

Figure 2



Median Starting Salaries of Inexperienced Chemical Engineers*
(in current dollars)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
BS	$21.6	$24.5	$26.7	$26.1	$27.0	$28.0	$28.4	$30.0	$31.0	$33.0
MS	23.9	26.0	29.0	29.2	30.3	31.4	31.0	32.5	33.0	36.0
PhD	28.8	31.5	35.0	38.0	39.9	40.0	41.5	43.0	44.4	47.0

*Base annual salary in thousands of dollars.

Not only has the unemployment rate for new chemical engineering graduates improved in 1989, but a greater proportion of them found employment in the field of chemistry or chemical engineering. This year, 82% of bachelor's chemical engineering graduates found employment in chemistry and chemical engineering compared to last year's 76%. The proportion of new chemistry graduates who found employment in chemistry or chemical engineering decreased to 65% this year from last year's 68%, but still evidences a generally upward trend since 1983.

PLANS FOR ADVANCED STUDY and POSTDOCTORAL FELLOWSHIPS

A rough indicator of demand for PhD graduates is postdoctoral fellows as a percent of new PhDs. Because some of the new doctoral chemists who accept postdoctoral fellowships would have preferred full-time employment, an increase in the fraction accepting such fellowships can indicate insufficient full-time employment. This year, this measure of demand indicates that the climate is somewhat less hospitable for both chemistry and chemical engineering doctorate recipients than it was last year. Among new chemistry doctorate recipients, 40% accepted postdoctoral positions in 1989 as compared with 35% in 1988 (Table 3). Among new chemical engineering doctorate recipients, 14% accepted such positions in 1988 as compared with 12% in 1988.

This year's bachelor's degree recipients are somewhat less likely than last year's to have plans for full-time studies. The proportion planning full-time studies has fluctuated, for the most part, between 50% and 55% in the 1980s. The anticipated field of study has not changed greatly in the 1980s either. From 40% to 50% of bachelor's chemistry graduates plan either full or part-time further study in chemistry and from 35% to 40% plan full-time further study in medicine or dentistry. A summary of these plans appears in Tables 4 and 5. Figure 3 shows the postgraduation plans of bachelor's chemistry graduates.

CHEMISTRY GRADUATES WHO HAVE COMPLETED ACS APPROVED PROGRAMS

Graduates completing undergraduate chemistry programs approved by the ACS Committee on Professional Training generally received higher starting salaries than graduates completing non-approved programs (see Table A-10). If planning further study, they are more likely to choose chemistry as their field of advanced study. Among bachelor's chemistry graduates planning full-time advanced study, approximately 31% plan to study medicine and approximately 38% plan to study chemistry. Approximately 82% of those studying medicine were in non-approved programs whereas 70% of those studying chemistry were in approved programs (see Table C-5). The unemployment rate for graduates of approved programs was somewhat lower (7% versus 13%) than that for graduates of non-approved programs (Table B-4a).

CHARACTERISTICS OF DEGREE-GRANTING INSTITUTIONS AND EMPLOYERS

Generally speaking, bachelor's chemists receive higher salaries if their degrees are from schools that are in the Pacific or West South Central regions or grant doctorate degrees, and chemists and chemical engineers employed by larger firms generally receive higher salaries than those employed by smaller firms.

For chemical engineers, the type, size, and location of school from which they received degrees make little difference in salaries. Employer size, however, does make a difference in chemical engineers salaries. Bachelor's chemical engineers employed in larger firms (more than 24,000 employees) make 10% more than chemical engineers employed in small firms (less than 500 employees). Proportionately more chemical engineers than chemists are clustered at the higher end of the salary range because proportionately more chemical engineers (46%) than chemists (24%) are employed in firms with more than 24,000 employees.

These differences, along with more obvious ones, ought to be taken into account in any comparisons among salaries.

EMPLOYMENT OF BACHELOR'S CHEMISTS AS TECHNICIANS

This year and last, the starting salary survey asked whether a respondent's job was classified as a technician position. In both years, 40% of the bachelor's chemistry respondents who were employed full time responded that they were employed as technicians. Those employed as technicians earned significantly lower salaries than those not employed as technicians. The median salary of bachelor's chemistry graduates employed as technicians was $22,000 whereas the median salary of those not employed as technicians was $24,000. Those employed as technicians were more likely than those not employed as technicians to have earned their degree at a bachelor's or master's-granting school, but otherwise they differed little from non-technicians in terms of the characteristics of the degree-granting school, grade point average, or completion of the ACS approved program.

RACIAL/ETHNIC COMPOSITION OF NEW GRADUATES

With the exception of Asians, the racial/ethnic composition of new graduates has not changed appreciably since 1973 (the first year ACS collected such information). Blacks, Hispanics, and American Indians are very small proportions of new graduates in chemistry and chemical engineering at all degree levels (Table F1). American Indians have historically been less than 1%, and Blacks and Hispanics have been approximately 2% each, of new chemistry graduates. Blacks constitute a slightly higher proportion of new bachelor's graduates (3%) than of new PhD graduates (1.3%). Among chemical engineering graduates, Blacks and Hispanics have made some gains over the past years. In 1989, Blacks were 3%, and Hispanics were 2%, of bachelor's chemical engineering graduates (Table F-4), whereas in 1973, they were each 0.4%.

Asians are the largest minority group among new chemistry graduates--7% of bachelor's, 20% of master's, and 23% of PhD graduates. The proportion of new graduates who are Asian has more than doubled since 1973. In that year, Asians were 3% of bachelor's, 9% of master's, and 9% of PhD graduates. Among this year's bachelor's chemistry graduates, the majority (75%) of Asians are U.S. citizens and another 17% are permanent residents (Table F-1), so that only 8% are likely to return to their home countries. The reverse is true of PhD chemistry graduates--only 12% are U.S. citizens and the majority (78%) are noncitizens here on temporary visas.

Table 3

POSTGRADUATION STATUS OF CHEMISTRY AND CHEMICAL ENGINEERING GRADUATES: FALL 1989

Major and Employment Status	Bachelor's	Master's	Doctorate
CHEMISTRY			
Full-time employed:			
In chemistry or chemical engineering	34.5%	50.6%	48.4%
Outside chemistry or chemical engineering	9.7%	5.5%	3.7%
Grad. asst./postdoctoral or other fellowship	30.9%	36.2%	40.4%
Unemployed and seeking full-time employment	8.6%	3.4%	6.2%
Unemployed and not seeking full-time employment	16.3%	4.3%	1.3%
Total	100.0	100.0	100.0
Number of responses	1,445	348	535
CHEMICAL ENGINEERING			
Full-time employed:			
In chemistry or chemical engineering	68.7%	55.8%	67.9%
Outside chemistry or chemical engineering	9.8%	9.4%	10.7%
Grad. asst./postdoctoral or other fellowship	14.1%	30.8%	14.3%
Unemployed and seeking full-time employment	5.1%	1.8%	6.0%
Unemployed and not seeking full-time employment	2.3%	2.2%	1.2%
Total	100.0	100.0	100.0
Number of responses	823	224	168

Table 4

PLANS FOR FURTHER STUDY OF B.S. CHEMISTRY AND CHEMICAL ENGINEERING GRADUATES: FALL 1989

Plans	Chemistry	Chemical Engineering
Further studies	61.5%	30.5%
Full-time	(51.0%)	(18.6%)
Part-time	(10.5%)	(11.9%)
No plans for further studies	38.5%	69.5%
Total	100.0	100.0
Number of responses	1,664	848

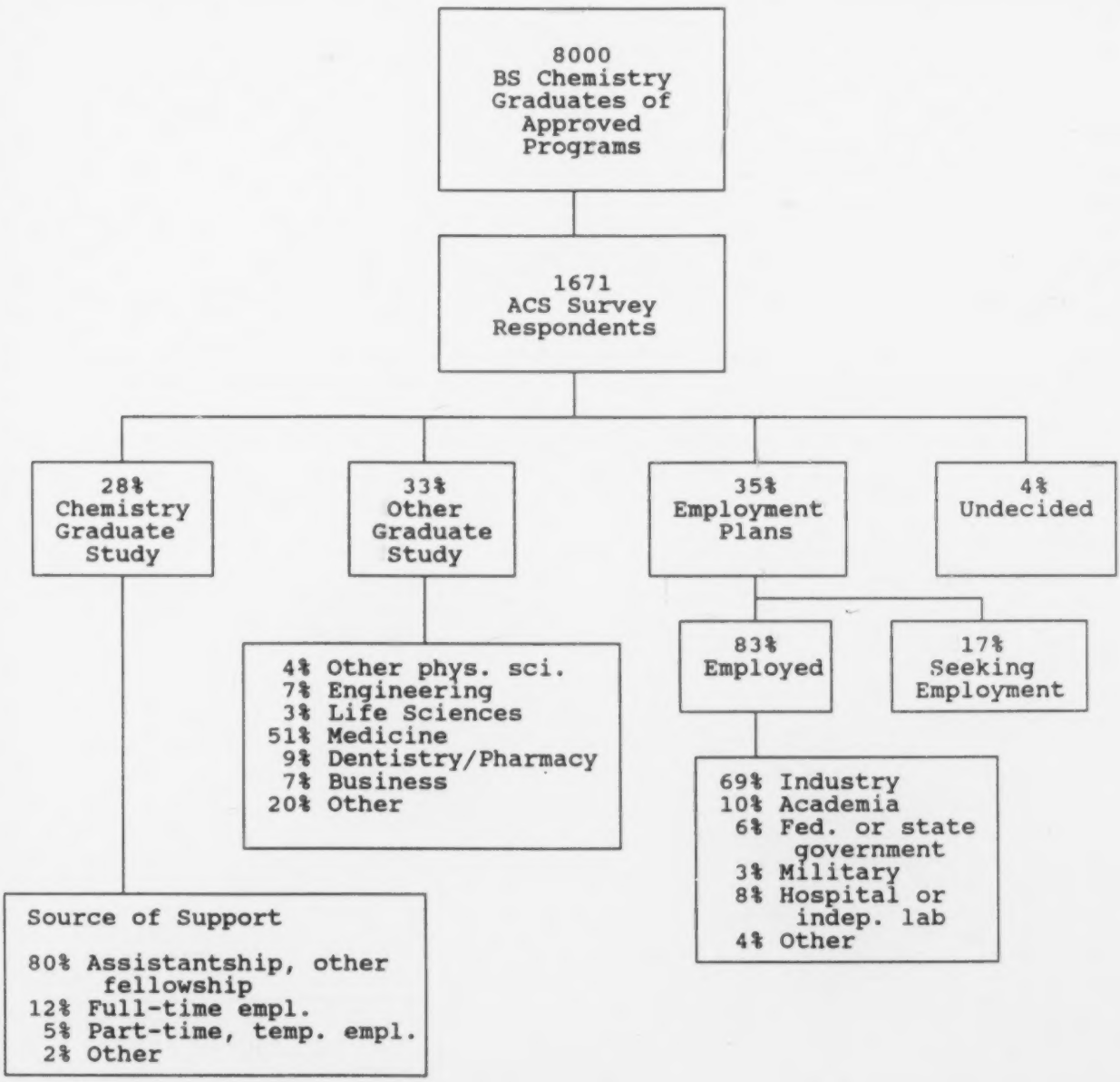
Table 5

FIELDS OF STUDY OF B.S. CHEMISTRY AND CHEMICAL ENGINEERING GRADUATES WHO PLAN FURTHER STUDIES Fall 1989

Field of Study	Chemistry	Chemical Engineering
FULL-TIME		
Chemistry or biochemistry	47.9%	4.5%
Chemical or biochemical engineering	1.4%	70.3%
Medicine or dentistry	33.8%	7.7%
Business or management	.9%	1.9%
All others	16.0%	15.6%
Total	100.0	100.0
Number of responses	845	155
PART-TIME		
Chemistry or biochemistry	39.9%	2.0%
Chemical or biochemical engineering	5.8%	27.0%
Medicine or dentistry	9.2%	0.0%
Business or management	17.3%	41.0%
All others	27.8%	30.0%
Total	100.0	100.0
Number of responses	173	100

Figure 3

Post-graduation Plans of 1989 BS Chemistry Graduates of ACS-Approved Programs



Source: 1989 ACS Starting Salary Survey.

SCOPE AND METHOD

OBJECTIVES

The 1989 Starting Salary Survey is the 38th in the series of annual surveys now conducted by the American Chemical Society. Summaries of the results of these surveys appear annually in the "Employment Outlook" edition of the *Chemical & Engineering News*. This year preliminary results were published on October 23.

The primary objective of the survey is to gather data on the starting salaries and occupational status of new chemists and chemical engineers who graduated during the 1988-89 academic year. The survey covers bachelor's, master's, and doctoral degree recipients. In addition, the survey provides information on graduates' sex, citizenship, and ethnicity.

METHOD OF COLLECTION AND TIMING OF SURVEY

Chemistry departments approved by the ACS and chemical engineering departments approved by the American Institute of Chemical Engineers and the Engineer's Council for Professional Development provided names and addresses of students that graduated between August, 1988 and June, 1989. During the summer of 1989, questionnaires were mailed to those graduates who had U.S. addresses.

EXTENT OF COVERAGE

Survey questionnaires were mailed by first class mail from July through September to 9,332 graduates. Approximately 3 weeks after each initital mailing, a second questionnaire and cover letter were sent to non-respondents. By the cutoff date of October 23, ACS had received 4,543 usable responses. Another 756 questionnaires were returned as nondeliverable. No attempt was made to examine the characteristics of graduates from departments that did not participate in the survey or of those graduates who did not mail back completed questionnaires.

DEFINITIONS

The term "inexperienced" as used in the tables refers to those who have 12 months or less of prior professional work experience. The term "chemist" refers to one who received a degree in chemistry. The term "chemical engineer" refers to one who received a degree in chemical engineering. Salary tables are based only on salaries of those who found full-time employment in chemistry or chemical engineering. Postdoctoral salaries are analyzed separately. Salaries are reported in U.S. dollars.

The Technical Notes present methods for estimating sampling error and also explain certain discrepancies among some of the tables.

GEOGRAPHIC REGIONS

PACIFIC

Alaska
California
Hawaii
Oregon
Washington

MOUNTAIN

Arizona
Colorado
Idaho
Montana
Nevada
New Mexico
Utah
Wyoming

WEST NORTH CENTRAL

Iowa
Kansas
Minnesota
Missouri
Nebraska
North Dakota
South Dakota

WEST SOUTH CENTRAL

Arkansas
Louisiana
Oklahoma
Texas

EAST NORTH CENTRAL

Illinois
Indiana
Michigan
Ohio
Wisconsin

EAST SOUTH CENTRAL

Alabama
Kentucky
Mississippi
Tennessee

MIDDLE ATLANTIC

New Jersey
New York
Pennsylvania

SOUTH ATLANTIC

Delaware
District of Columbia
Florida
Georgia
Maryland
North Carolina
South Carolina
Virginia
West Virginia

NEW ENGLAND

Connecticut
Maine
Massachusetts
New Hampshire
Rhode Island
Vermont

TECHNICAL NOTES

DISCREPANCIES AMONG TABLES

Because not all individuals responded to all of the survey items, some pairs of tables contain totals that should be identical but are not. For example, one table may group PhDs according to sex and another according to employer. The totals will differ unless the number who did not indicate their sex is the same as the number who did not indicate their employer.

ESTIMATES OF MEDIAN SALARIES

Median salaries displayed within the cells of the salary tables are sample medians and are therefore subject to sampling error. This error could be quite large, especially when the number of respondents in the corresponding cell is small. Therefore, median salaries in cells with fewer than 15 respondents should not be used to estimate their corresponding population medians. Similarly, tables showing the 25th and 75th salary percentiles, and those showing the 10th and 90th salary percentiles, should have at least 25 respondents and 40 respondents, respectively.

COMPARING SALARIES

Often questions arise concerning women's salaries as compared with men's, or chemists' salaries as compared with chemical engineers'. These and similar comparisons require caution.

Statistical tests should be performed to determine whether observed differences in salaries of various sample groups could be mere chance occurrences resulting from peculiarities of the samples. Whether a difference in salaries is "statistically significant" depends not only on the magnitude of the difference but also on the sample sizes and the magnitudes of the sample standard deviations.

Discussion of statistical tests of significance may be found in *Introductory Statistics for Business and Economics*, by Thomas H. Wonnacott and Ronald J. Wonnacott, NY: Wiley, 1984, and in other similar texts.

ESTIMATING SAMPLING ERROR FOR PERCENTS

Percents in this report are derived from the sample. If the entire population had received and returned questionnaires, most estimates would be somewhat different. How much different? Although this question does not have an exact answer, the table below does provide some guidance. To use the table, find the column headed by the percent (p) derived from the sample, and find the row appropriate for the sample size (n). (Approximations for p and n may be used.) Note the number in that column and that row of the table.

This number from the body of the table measures the precision with which the sample percent estimates the percent of the entire population. Specifically, if this procedure is applied repeatedly, about 95 times out of 100, the population percent will differ from the sample percent by no more than the amount shown in the table.

Approximate Sampling Errors for Percents

n	p= 10% or 90%	p= 20% or 80%	p= 30% or 70%	p= 40% or 60%	p= 50%
50	8.3%	11.1%	12.7%	13.6%	13.9%
100	5.9	7.8	9.0	9.6	9.8
200	4.2	5.5	6.4	6.8	6.9
500	2.6	3.5	4.0	4.3	4.4
1000	1.9	2.5	2.8	3.0	3.1
2000	1.3	1.8	2.0	2.1	2.2
5000	0.8	1.1	1.3	1.4	1.4
10000	0.6	0.8	0.9	1.0	1.0

In Table B-1a for example, 499 respondents classified as chemists indicated their highest degree as the bachelor's degree, and their employment status as employed full-time in chemistry. The percent of this group who are women is listed as 40.9 percent (p=40.9). A "95% confidence interval" for this percent may be approximated by taking n and p to be about 500 and 40%. The above table shows an approximate sampling error of 4.3%. Hence, the 95% confidence interval is 36.6% to 45.2%. If estimates were made at this "level of confidence" from 100 similar samples, about 95 of the confidence intervals calculated from these samples would contain the true population percent.

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Table A-1

SALARIES of CHEMISTS employed FULL-TIME
by DEGREE and EXPERIENCE
1989 Starting Salary Survey

	HIGHEST DEGREE		
	BS	MS	PHD
WORK EXPERIENCE			
LESS THAN 12 MONTHS			
Median	23,000	30,300	42,000
Mean	23,167	29,863	38,782
Std Dev	5,033	5,986	8,343
Count	318	79	150
12 TO 36 MONTHS			
Median	24,116	29,600	42,500
Mean	23,870	28,583	38,559
Std Dev	4,556	5,439	10,416
Count	130	39	54
MORE THAN 36 MONTHS			
Median	29,950	34,500	43,250
Mean	28,872	34,025	39,428
Std Dev	5,920	8,137	10,609
Count	50	57	53
TOTAL			
Median	24,000	31,300	42,000
Mean	23,935	30,928	38,872
Std Dev	5,281	6,979	9,286
Count	498	175	257

Table A-2

SALARIES of CHEMICAL ENGINEERS employed FULL-TIME
by DEGREE and EXPERIENCE
1989 Starting Salary Survey

	HIGHEST DEGREE		
	BS	MS	PHD
WORK EXPERIENCE			
LESS THAN 12 MONTHS			
Median	33,000	36,000	47,000
Mean	32,223	35,697	45,802
Std Dev	3,208	4,300	4,704
Count	378	63	72
12 TO 36 MONTHS			
Median	33,500	36,300	47,000
Mean	32,826	35,910	46,846
Std Dev	2,649	3,488	5,689
Count	169	37	26
MORE THAN 36 MONTHS			
Median	34,160	38,500	46,500
Mean	33,934	40,313	46,049
Std Dev	2,131	5,808	8,023
Count	18	23	16
TOTAL			
Median	33,000	36,500	47,000
Mean	32,458	36,606	46,064
Std Dev	3,042	4,710	5,400
Count	565	123	114

Table A-3

SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME
in PRIVATE INDUSTRY by SEX and DEGREE
1989 Starting Salary Survey

	HIGHEST DEGREE		
	BS	MS	PHD
SEX			
MEN			
Median	24,000	32,000	43,260
Mean	24,523	32,290	42,329
Std Dev	4,961	3,899	4,808
Count	131	44	72
WOMEN			
Median	25,000	29,000	42,600
Mean	24,629	28,153	42,786
Std Dev	4,196	5,041	2,717
Count	96	17	37
TOTAL			
Median	25,000	31,550	42,950
Mean	24,568	31,118	42,487
Std Dev	4,644	4,610	4,194
Count	227	61	109

Table A-4

SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME
in PRIVATE INDUSTRY by SEX and DEGREE
1989 Starting Salary Survey

	HIGHEST DEGREE		
	BS	MS	PHD
SEX			
MEN			
Median	33,000	36,000	47,600
Mean	32,514	36,095	46,900
Std Dev	2,766	2,973	3,408
Count	228	47	53
WOMEN			
Median	33,000	36,650	47,400
Mean	32,511	36,306	46,283
Std Dev	2,632	3,226	3,093
Count	132	8	7
TOTAL			
Median	33,000	36,000	47,500
Mean	32,513	36,126	46,827
Std Dev	2,714	2,981	3,353
Count	360	55	60

Table A-5

SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME
by DEGREE and SEX
1989 Starting Salary Survey

	HIGHEST DEGREE		
	BS	MS	PHD
SEX			
MEN			
Median	23,000	31,790	42,000
Mean	23,365	31,595	39,182
Std Dev	5,257	5,637	8,138
Count	173	53	97
WOMEN			
Median	23,000	24,000	41,570
Mean	22,932	26,260	38,075
Std Dev	4,761	5,092	8,731
Count	145	26	53
TOTAL			
Median	23,000	30,300	42,000
Mean	23,167	29,863	38,782
Std Dev	5,033	5,986	8,343
Count	318	79	150

Table A-6

SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME
by DEGREE and EMPLOYER
1989 Starting Salary Survey

	HIGHEST DEGREE		
	BS	MS	PHD
EMPLOYER			
PRIVATE INDUSTRY			
Median	25,000	31,550	42,950
Mean	24,568	31,118	42,487
Std Dev	4,644	4,610	4,194
Count	227	61	109
COLLEGE OR UNIV			
Median	18,730	22,300	27,000
Mean	18,571	23,650	27,342
Std Dev	2,073	3,204	7,741
Count	25	7	26
HIGH SCHOOL			
Median	20,000	19,250	---
Mean	18,667	19,250	---
Std Dev	6,906	2,475	---
Count	10	2	0
FEDERAL GOVT			
Median	20,000	27,990	40,000
Mean	22,277	31,870	33,400
Std Dev	4,407	14,378	10,526
Count	11	4	5
MILITARY			
Median	20,000	---	35,000
Mean	21,200	---	35,000
Std Dev	3,633	---	0
Count	6	0	1
STATE OR LOCAL GOVT			
Median	20,100	29,000	34,500
Mean	21,327	29,000	34,500
Std Dev	2,345	0	4,950
Count	5	1	2
HOSPITAL OR LAB			
Median	19,000	22,000	21,500
Mean	18,717	22,000	22,500
Std Dev	2,765	0	5,074
Count	25	2	3
OTHER			
Median	22,300	25,750	38,000
Mean	21,075	25,750	38,867
Std Dev	7,607	8,132	12,323
Count	8	2	4
TOTAL			
Median	23,000	30,300	42,000
Mean	23,167	29,863	38,782
Std Dev	5,033	5,986	8,343
Count	317	79	150

Table A-7

SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME
by DEGREE and EMPLOYER - MEN only
1989 Starting Salary Survey

	HIGHEST DEGREE		
	BS	MS	PHD
EMPLOYER			
PRIVATE INDUSTRY			
Median	24,000	32,000	43,260
Mean	24,523	32,290	42,329
Std Dev	4,961	3,899	4,808
Count	131	44	72
COLLEGE OR UNIV			
Median	19,500	23,000	26,500
Mean	19,069	24,333	28,086
Std Dev	2,318	4,163	9,079
Count	14	3	16
HIGH SCHOOL			
Median	19,000	17,500	---
Mean	15,333	17,500	---
Std Dev	11,449	0	---
Count	3	1	0
FEDERAL GOVT			
Median	19,500	31,980	40,500
Mean	21,360	34,493	35,750
Std Dev	4,886	16,395	10,532
Count	5	3	4
MILITARY			
Median	22,000	---	---
Mean	22,000	---	---
Std Dev	3,651	---	---
Count	5	0	0
STATE OR LOCAL GOVT			
Median	20,000	29,000	34,500
Mean	20,000	29,000	34,500
Std Dev	0	0	4,950
Count	1	1	2
HOSPITAL OR LAB			
Median	18,500	---	---
Mean	18,458	---	---
Std Dev	2,921	---	---
Count	10	0	0
OTHER			
Median	24,000	31,500	32,500
Mean	24,333	31,500	32,500
Std Dev	4,509	0	7,778
Count	3	1	3
TOTAL			
Median	23,000	31,790	42,000
Mean	23,365	31,595	39,182
Std Dev	5,257	5,637	8,138
Count	172	53	97

Table A-8

SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME
by DEGREE and EMPLOYER - WOMEN only
1989 Starting Salary Survey

	HIGHEST DEGREE		
	BS	MS	PHD
EMPLOYER			
PRIVATE INDUSTRY			
Median	25,000	29,000	42,600
Mean	24,629	28,153	42,786
Std Dev	4,196	5,041	2,717
Count	96	17	37
COLLEGE OR UNIV			
Median	18,512	21,600	27,000
Mean	17,936	22,967	26,150
Std Dev	1,592	2,631	5,148
Count	11	4	10
HIGH SCHOOL			
Median	21,000	21,000	---
Mean	20,333	21,000	---
Std Dev	3,724	0	---
Count	7	1	0
FEDERAL GOVT			
Median	22,423	24,000	24,000
Mean	23,041	24,000	24,000
Std Dev	4,266	0	0
Count	6	1	1
MILITARY			
Median	18,000	---	35,000
Mean	18,000	---	35,000
Std Dev	0	---	0
Count	1	0	1
STATE OR LOCAL GOVT			
Median	20,850	---	---
Mean	21,659	---	---
Std Dev	2,568	---	---
Count	4	0	0
HOSPITAL OR LAB			
Median	19,000	22,000	21,500
Mean	18,890	22,000	22,500
Std Dev	2,747	0	5,074
Count	15	2	3
OTHER			
Median	20,600	20,000	51,600
Mean	19,120	20,000	51,600
Std Dev	8,853	0	0
Count	5	1	1
TOTAL			
Median	23,000	24,000	41,570
Mean	22,932	26,260	38,075
Std Dev	4,761	5,092	8,731
Count	145	26	53

Table A-9

SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME
by DEGREE and WORK FUNCTION
1989 Starting Salary Survey

	HIGHEST DEGREE		
	BS	MS	PHD
WORK FUNCTION			
TEACHING			
Median	20,000	21,000	27,500
Mean	18,800	22,300	29,112
Std Dev	6,524	4,237	5,446
Count	11	5	15
MGMT OR ADMIN			
Median	26,000	33,000	40,000
Mean	25,653	34,833	40,000
Std Dev	2,679	4,537	0
Count	11	4	1
BASIC RESEARCH			
Median	20,500	31,000	40,750
Mean	22,646	31,563	36,379
Std Dev	5,287	8,109	10,564
Count	60	16	36
APPLIED RESEARCH			
Median	24,000	31,600	42,500
Mean	24,430	30,871	41,216
Std Dev	4,691	4,484	6,346
Count	98	37	95
PRODUCTION			
Median	23,000	28,000	---
Mean	23,185	27,149	---
Std Dev	4,710	4,664	---
Count	90	12	1
OTHER			
Median	21,000	29,000	38,000
Mean	21,636	27,520	38,000
Std Dev	5,106	5,697	0
Count	47	5	2
TOTAL			
Median	23,000	30,300	42,000
Mean	23,167	29,863	38,782
Std Dev	5,033	5,986	8,343
Count	317	79	150

Table A-10

SALARIES of INEXPERIENCED B.S. CHEMISTS employed FULL-TIME
by EMPLOYER and CERTIFICATION
1989 Starting Salary Survey

	CURRICULUM APPROVED?		TOTAL
	NO	YES	
EMPLOYER			
PRIVATE INDUSTRY			
Median	24,000	25,000	25,000
Mean	24,274	24,829	24,568
Std Dev	5,073	4,231	4,644
Count	106	121	227
COLLEGE OR UNIV			
Median	18,730	19,000	18,730
Mean	18,351	18,900	18,571
Std Dev	1,751	2,547	2,073
Count	15	10	25
HIGH SCHOOL			
Median	19,500	22,000	20,000
Mean	17,417	21,167	18,667
Std Dev	8,052	3,819	6,906
Count	7	3	10
FEDERAL GOVT			
Median	22,423	19,300	20,000
Mean	23,343	19,433	22,277
Std Dev	4,786	513	4,407
Count	8	3	11
MILITARY			
Median	21,000	20,000	20,000
Mean	21,500	20,000	21,200
Std Dev	4,123	0	3,633
Count	5	1	6
STATE OR LOCAL GOVT			
Median	20,050	25,300	20,100
Mean	20,334	25,300	21,327
Std Dev	868	0	2,345
Count	4	1	5
HOSPITAL OR LAB			
Median	18,000	19,000	19,000
Mean	18,554	18,868	18,717
Std Dev	3,277	2,324	2,765
Count	12	13	25
OTHER			
Median	24,000	20,000	22,300
Mean	23,920	16,333	21,075
Std Dev	3,759	10,970	7,607
Count	5	3	8
TOTAL			
Median	22,000	24,000	23,000
Mean	22,798	23,554	23,167
Std Dev	5,269	4,761	5,033
Count	162	155	317

Table A-11

SALARIES of INEXPERIENCED MS and PhD CHEMISTS employed FULL-TIME
by DEGREE and DEGREE SPECIALTY
1989 Starting Salary Survey

	HIGHEST DEGREE	
	MS	PHD
DEGREE SPECIALTY		
BIOCHEMISTRY		
Median	30,000	30,750
Mean	31,389	31,083
Std Dev	10,154	10,375
Count	10	6
ANALYTICAL CHEM		
Median	30,000	41,000
Mean	29,431	38,669
Std Dev	5,029	6,756
Count	21	43
INORGANIC CHEM		
Median	29,000	42,450
Mean	27,546	40,136
Std Dev	5,276	8,082
Count	10	24
ORGANIC CHEM		
Median	31,750	42,750
Mean	30,626	40,466
Std Dev	5,516	7,916
Count	28	53
PHYSICAL CHEM		
Median	34,300	38,000
Mean	31,300	35,491
Std Dev	6,500	10,644
Count	4	20
POLYMER CHEM		
Median	30,570	44,250
Mean	29,035	44,250
Std Dev	5,615	2,475
Count	4	2
OTHER CHEM		
Median	27,000	34,710
Mean	27,000	34,710
Std Dev	1,414	9,800
Count	2	2
TOTAL		
Median	30,300	42,000
Mean	29,863	38,782
Std Dev	5,986	8,343
Count	79	150

Table A-12

SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME
by DEGREE and GEOGRAPHIC REGION
1989 Starting Salary Survey

	HIGHEST DEGREE		
	BS	MS	PHD
GEOGRAPHIC REGION			
Pacific			
Median	25,000	21,300	42,250
Mean	25,378	26,100	41,063
Std Dev	5,158	9,462	6,977
Count	24	3	9
Mountain			
Median	19,150	26,790	41,000
Mean	20,717	26,830	41,600
Std Dev	5,494	8,746	8,616
Count	13	5	6
West North Central			
Median	20,000	32,700	40,000
Mean	19,911	32,123	33,014
Std Dev	3,176	4,861	11,706
Count	15	3	8
West South Central			
Median	23,000	32,000	44,000
Mean	23,201	29,333	41,339
Std Dev	5,488	5,345	6,776
Count	27	6	15
East North Central			
Median	24,000	31,000	42,750
Mean	23,650	30,630	39,505
Std Dev	4,118	4,716	7,497
Count	84	21	29
East South Central			
Median	20,000	25,650	40,075
Mean	20,977	25,650	39,638
Std Dev	4,315	6,576	6,328
Count	11	2	6
Middle Atlantic			
Median	25,700	32,000	42,000
Mean	24,969	31,629	38,863
Std Dev	5,679	5,284	8,343
Count	58	19	34
South Atlantic			
Median	20,390	27,600	42,000
Mean	21,470	27,289	36,098
Std Dev	4,869	5,137	9,419
Count	56	9	26
New England			
Median	22,500	30,000	42,000
Mean	23,094	31,250	39,100
Std Dev	4,338	9,377	8,644
Count	13	8	16
TOTAL			
Median	23,000	30,650	42,000
Mean	23,154	29,966	38,767
Std Dev	5,040	6,039	8,371
Count	301	76	149

Table A-13

SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME
by DEGREE and SEX
1989 Starting Salary Survey

	HIGHEST DEGREE		
	BS	MS	PHD
SEX			
MEN			
Median	33,000	36,000	47,000
Mean	32,241	35,660	45,919
Std Dev	3,220	4,507	4,839
Count	242	53	63
WOMEN			
Median	33,000	36,000	45,500
Mean	32,189	35,828	44,998
Std Dev	3,198	3,342	3,774
Count	136	9	9
TOTAL			
Median	33,000	36,000	47,000
Mean	32,223	35,684	45,802
Std Dev	3,208	4,334	4,704
Count	378	62	72

Table A-14

SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME
by DEGREE and EMPLOYER
1989 Starting Salary Survey

	HIGHEST DEGREE		
	BS	MS	PHD
EMPLOYER			
PRIVATE INDUSTRY			
Median	33,000	36,050	47,500
Mean	32,513	36,133	46,827
Std Dev	2,714	2,954	3,353
Count	360	56	60
COLLEGE OR UNIV			
Median	---	---	41,000
Mean	---	---	42,533
Std Dev	---	---	7,633
Count	0	0	6
FEDERAL GOVT			
Median	25,885	32,000	38,500
Mean	26,362	32,166	38,500
Std Dev	4,846	5,753	3,512
Count	7	3	4
MILITARY			
Median	24,000	35,000	---
Mean	21,300	35,000	---
Std Dev	6,852	21,213	---
Count	5	2	0
STATE OR LOCAL GOVT			
Median	29,750	---	---
Mean	29,750	---	---
Std Dev	354	---	---
Count	2	0	0
OTHER			
Median	31,810	29,500	40,000
Mean	31,805	29,500	40,000
Std Dev	992	4,950	12,728
Count	4	2	2
TOTAL			
Median	33,000	36,000	47,000
Mean	32,223	35,697	45,802
Std Dev	3,208	4,300	4,704
Count	378	63	72

Table A-15

SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME
by DEGREE and EMPLOYER - MEN only
1989 Starting Salary Survey

	HIGHEST DEGREE		
	BS	MS	PHD
EMPLOYER			
PRIVATE INDUSTRY			
Median	33,000	36,000	47,600
Mean	32,514	36,095	46,900
Std Dev	2,766	2,973	3,408
Count	228	47	53
COLLEGE OR UNIV			
Median	---	---	41,000
Mean	---	---	43,550
Std Dev	---	---	9,564
Count	0	0	4
FEDERAL GOVT			
Median	29,830	32,249	38,500
Mean	29,376	32,249	38,500
Std Dev	3,526	8,133	3,512
Count	4	2	4
MILITARY			
Median	24,000	35,000	---
Mean	21,500	35,000	---
Std Dev	7,895	21,213	---
Count	4	2	0
STATE OR LOCAL GOVT			
Median	29,750	---	---
Mean	29,750	---	---
Std Dev	354	---	---
Count	2	0	0
OTHER			
Median	31,810	29,500	40,000
Mean	31,805	29,500	40,000
Std Dev	992	4,950	12,728
Count	4	2	2
TOTAL			
Median	33,000	36,000	47,000
Mean	32,241	35,660	45,919
Std Dev	3,220	4,507	4,839
Count	242	53	63

Table A-16

SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME
by DEGREE and EMPLOYER - WOMEN only
1989 Starting Salary Survey

	HIGHEST DEGREE		
	BS	MS	PHD
EMPLOYER			
PRIVATE INDUSTRY			
Median	33,000	36,650	47,400
Mean	32,511	36,306	46,283
Std Dev	2,632	3,226	3,093
Count	132	8	7
COLLEGE OR UNIV			
Median	---	---	40,500
Mean	---	---	40,500
Std Dev	---	---	2,121
Count	0	0	2
FEDERAL GOVT			
Median	20,643	32,000	---
Mean	22,343	32,000	---
Std Dev	3,069	0	---
Count	3	1	0
MILITARY			
Median	20,500	---	---
Mean	20,500	---	---
Std Dev	0	---	---
Count	1	0	0
TOTAL			
Median	33,000	36,000	45,500
Mean	32,189	35,828	44,998
Std Dev	3,198	3,342	3,774
Count	136	9	9

Table A-17

SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME
by DEGREE and WORK FUNCTION
1989 Starting Salary Survey

	HIGHEST DEGREE		
	BS	MS	PHD
WORK FUNCTION			
TEACHING			
Median	29,500	---	42,000
Mean	28,033	---	41,000
Std Dev	3,536	---	1,732
Count	3	0	3
MGMT OR ADMIN			
Median	31,905	35,000	52,000
Mean	31,198	35,002	52,000
Std Dev	2,276	10,817	0
Count	13	5	1
BASIC RESEARCH			
Median	32,100	37,000	46,000
Mean	29,560	36,175	44,813
Std Dev	5,444	3,009	5,989
Count	9	4	12
APPLIED RESEARCH			
Median	33,000	36,000	47,500
Mean	32,556	35,763	46,449
Std Dev	3,019	3,000	3,854
Count	169	31	55
PRODUCTION			
Median	33,000	36,000	---
Mean	32,547	36,529	---
Std Dev	2,511	2,709	---
Count	137	17	0
OTHER			
Median	32,400	33,550	31,000
Mean	31,082	33,262	31,000
Std Dev	4,590	6,526	0
Count	45	6	1
TOTAL			
Median	33,000	36,000	47,000
Mean	32,222	35,697	45,802
Std Dev	3,212	4,300	4,704
Count	376	63	72

Table A-18

SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME
by DEGREE and GEOGRAPHIC REGION
1989 Starting Salary Survey

	HIGHEST DEGREE		
	BS	MS	PHD
GEOGRAPHIC REGION			
Pacific			
Median	32,450	35,875	47,250
Mean	32,623	36,294	47,438
Std Dev	4,459	3,335	2,412
Count	33	8	8
Mountain			
Median	33,000	35,000	45,000
Mean	33,375	35,000	45,000
Std Dev	1,702	0	7,357
Count	4	1	2
West North Central			
Median	32,400	36,500	45,275
Mean	31,641	36,500	45,275
Std Dev	2,627	0	3,005
Count	24	1	2
West South Central			
Median	33,400	36,000	48,000
Mean	33,368	35,165	47,353
Std Dev	1,769	2,964	2,793
Count	87	16	9
East North Central			
Median	32,950	36,600	48,250
Mean	32,401	36,219	47,833
Std Dev	2,341	4,405	3,959
Count	62	11	12
East South Central			
Median	33,000	42,500	44,400
Mean	32,067	42,500	44,400
Std Dev	3,563	10,607	0
Count	21	2	1
Middle Atlantic			
Median	32,500	37,300	46,800
Mean	31,632	36,593	45,242
Std Dev	3,286	2,339	4,558
Count	77	7	25
South Atlantic			
Median	32,500	34,000	47,500
Mean	31,573	33,040	44,263
Std Dev	3,544	6,260	5,946
Count	38	10	9
New England			
Median	32,470	35,250	35,000
Mean	31,601	36,017	37,067
Std Dev	2,671	3,365	7,322
Count	25	6	3
TOTAL			
Median	33,000	36,000	47,000
Mean	32,287	35,654	45,728
Std Dev	2,994	4,321	4,696
Count	371	62	71

Table B-1a

CHEMISTRY GRADUATES
by EMPLOYMENT STATUS, SEX, and DEGREE
1989 Starting Salary Survey

	BACHELORS			MASTERS			DOCTORATE		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
FULL-TIME IN CHEMISTRY									
Count	295	204	499	109	67	176	177	82	259
Row Percent	59.1%	40.9%	100.0%	61.9%	38.1%	100.0%	68.3%	31.7%	100.0%
Column Percent	34.0%	35.4%	34.5%	47.8%	55.8%	50.6%	45.3%	56.9%	48.4%
FULL-TIME IN NON-CHEMISTRY									
Count	84	56	140	11	8	19	15	5	20
Row Percent	60.0%	40.0%	100.0%	57.9%	42.1%	100.0%	75.0%	25.0%	100.0%
Column Percent	9.7%	9.7%	9.7%	4.8%	6.7%	5.5%	3.8%	3.5%	3.7%
FELLOWSHIP									
Count	282	165	447	97	29	126	172	44	216
Row Percent	63.1%	36.9%	100.0%	77.0%	23.0%	100.0%	79.6%	20.4%	100.0%
Column Percent	32.5%	28.6%	30.9%	42.5%	24.2%	36.2%	44.0%	30.6%	40.4%
SEEKING EMPLOYMENT									
Count	67	57	124	5	7	12	22	11	33
Row Percent	54.0%	46.0%	100.0%	41.7%	58.3%	100.0%	66.7%	33.3%	100.0%
Column Percent	7.7%	9.9%	8.6%	2.2%	5.8%	3.4%	5.6%	7.6%	6.2%
NOT SEEKING EMPLOYMENT									
Count	140	95	235	6	9	15	5	2	7
Row Percent	59.6%	40.4%	100.0%	40.0%	60.0%	100.0%	71.4%	28.6%	100.0%
Column Percent	16.1%	16.5%	16.3%	2.6%	7.5%	4.3%	1.3%	1.4%	1.3%
TOTAL									
Count	868	577	1445	228	120	348	391	144	535
Row Percent	60.1%	39.9%	100.0%	65.5%	34.5%	100.0%	73.1%	26.9%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table B-1b

CHEMISTRY GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1989, SEX, and DEGREE
1989 Starting Salary Survey

	BACHELORS			MASTERS			DOCTORATE		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
PURSUE ADVANCED STUDIES IN FALL 89									
YES, FULL-TIME									
Count	549	300	849	107	37	144	44	12	56
Row Percent	64.7%	35.3%	100.0%	74.3%	25.7%	100.0%	78.6%	21.4%	100.0%
Column Percent	53.7%	46.7%	51.0%	45.9%	29.1%	40.0%	11.6%	8.5%	10.8%
YES, PART-TIME									
Count	109	65	174	12	7	19	6	6	12
Row Percent	62.6%	37.4%	100.0%	63.2%	36.8%	100.0%	50.0%	50.0%	100.0%
Column Percent	10.7%	10.1%	10.5%	5.2%	5.5%	5.3%	1.6%	4.2%	2.3%
NO									
Count	364	277	641	114	83	197	328	124	452
Row Percent	56.8%	43.2%	100.0%	57.9%	42.1%	100.0%	72.6%	27.4%	100.0%
Column Percent	35.6%	43.1%	38.5%	48.9%	65.4%	54.7%	86.8%	87.3%	86.9%
TOTAL									
Count	1022	642	1664	233	127	360	378	142	520
Row Percent	61.4%	38.6%	100.0%	64.7%	35.3%	100.0%	72.7%	27.3%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table B-2a

BS CHEMISTRY GRADUATES
by EMPLOYMENT STATUS and CITIZENSHIP
1989 Starting Salary Survey

	CITIZENSHIP			
	U.S. NATIVE	U.S. NATURAL-IZED	U.S. PERMANENT RESIDENT	OTHER VISA
EMPLOYMENT STATUS				
FULL-TIME IN CHEMISTRY				
Count	454	26	11	6
Row Percent	91.3%	5.2%	2.2%	1.2%
Column Percent	34.8%	38.8%	23.9%	24.0%
FULL-TIME IN NON-CHEMISTRY				
Count	132	6	2	0
Row Percent	94.3%	4.3%	1.4%	.0%
Column Percent	10.1%	9.0%	4.3%	.0%
FELLOWSHIP				
Count	418	12	8	10
Row Percent	93.3%	2.7%	1.8%	2.2%
Column Percent	32.0%	17.9%	17.4%	40.0%
SEEKING EMPLOYMENT				
Count	97	9	11	6
Row Percent	78.9%	7.3%	8.9%	4.9%
Column Percent	7.4%	13.4%	23.9%	24.0%
NOT SEEKING EMPLOYMENT				
Count	204	14	14	3
Row Percent	86.8%	6.0%	6.0%	1.3%
Column Percent	15.6%	20.9%	30.4%	12.0%
TOTAL				
Count	1305	67	46	25
Row Percent	90.4%	4.6%	3.2%	1.7%
Column Percent	100.0%	100.0%	100.0%	100.0%

Table B-2a Continued

MS CHEMISTRY GRADUATES
by EMPLOYMENT STATUS and CITIZENSHIP
1989 Starting Salary Survey

	CITIZENSHIP			
	U.S. NATIVE	U.S. NATURAL-IZED	U.S. PERMANENT RESIDENT	OTHER VISA
EMPLOYMENT STATUS				
FULL-TIME IN CHEMISTRY				
Count	148	8	4	16
Row Percent	84.1%	4.5%	2.3%	9.1%
Column Percent	56.9%	61.5%	30.8%	25.8%
FULL-TIME IN NON-CHEMISTRY				
Count	16	1	1	1
Row Percent	84.2%	5.3%	5.3%	5.3%
Column Percent	6.2%	7.7%	7.7%	1.6%
FELLOWSHIP				
Count	77	4	5	40
Row Percent	61.1%	3.2%	4.0%	31.7%
Column Percent	29.6%	30.8%	38.5%	64.5%
SEEKING EMPLOYMENT				
Count	7	0	2	3
Row Percent	58.3%	.0%	16.7%	25.0%
Column Percent	2.7%	.0%	15.4%	4.8%
NOT SEEKING EMPLOYMENT				
Count	12	0	1	2
Row Percent	80.0%	.0%	6.7%	13.3%
Column Percent	4.6%	.0%	7.7%	3.2%
TOTAL				
Count	260	13	13	62
Row Percent	74.7%	3.7%	3.7%	17.8%
Column Percent	100.0%	100.0%	100.0%	100.0%

Table B-2a Continued

PHD CHEMISTRY GRADUATES
by EMPLOYMENT STATUS and CITIZENSHIP
1989 Starting Salary Survey

	CITIZENSHIP			
	U.S. NATIVE	U.S. NATURAL-IZED	U.S. PERMANENT RESIDENT	OTHER VISA
EMPLOYMENT STATUS				
FULL-TIME IN CHEMISTRY				
Count	209	10	6	35
Row Percent	80.4%	3.8%	2.3%	13.5%
Column Percent	54.3%	58.8%	33.3%	29.9%
FULL-TIME IN NON-CHEMISTRY				
Count	15	0	1	4
Row Percent	75.0%	.0%	5.0%	20.0%
Column Percent	3.9%	.0%	5.6%	3.4%
FELLOWSHIP				
Count	139	6	10	62
Row Percent	64.1%	2.8%	4.6%	28.6%
Column Percent	36.1%	35.3%	55.6%	53.0%
SEEKING EMPLOYMENT				
Count	17	1	1	14
Row Percent	51.5%	3.0%	3.0%	42.4%
Column Percent	4.4%	5.9%	5.6%	12.0%
NOT SEEKING EMPLOYMENT				
Count	5	0	0	2
Row Percent	71.4%	.0%	.0%	28.6%
Column Percent	1.3%	.0%	.0%	1.7%
TOTAL				
Count	385	17	18	117
Row Percent	71.7%	3.2%	3.4%	21.8%
Column Percent	100.0%	100.0%	100.0%	100.0%

Table B-2b

BS CHEMISTRY GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1989 and CITIZENSHIP
1989 Starting Salary Survey

	CITIZENSHIP			
	U.S. NATIVE	U.S. NATURAL-IZED	U.S. PERMANENT RESIDENT	OTHER VISA
PURSUE ADVANCED STUDIES IN FALL 89				
YES, FULL-TIME				
Count	771	39	26	14
Row Percent	90.7%	4.6%	3.1%	1.6%
Column Percent	51.3%	47.6%	50.0%	56.0%
YES, PART-TIME				
Count	153	9	6	5
Row Percent	88.4%	5.2%	3.5%	2.9%
Column Percent	10.2%	11.0%	11.5%	20.0%
NO				
Count	579	34	20	6
Row Percent	90.6%	5.3%	3.1%	.9%
Column Percent	38.5%	41.5%	38.5%	24.0%
TOTAL				
Count	1503	82	52	25
Row Percent	90.4%	4.9%	3.1%	1.5%
Column Percent	100.0%	100.0%	100.0%	100.0%

Table B-2b Continued

MS CHEMISTRY GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1989 and CITIZENSHIP
1989 Starting Salary Survey

	CITIZENSHIP			
	U.S. NATIVE	U.S. NATURAL-IZED	U.S. PERMANENT RESIDENT	OTHER VISA
PURSUE ADVANCED STUDIES IN FALL 89				
YES, FULL-TIME				
Count	87	5	6	46
Row Percent	60.4%	3.5%	4.2%	31.9%
Column Percent	32.5%	35.7%	42.9%	71.9%
YES, PART-TIME				
Count	16	0	0	3
Row Percent	84.2%	.0%	.0%	15.8%
Column Percent	6.0%	.0%	.0%	4.7%
NO				
Count	165	9	8	15
Row Percent	83.8%	4.6%	4.1%	7.6%
Column Percent	61.6%	64.3%	57.1%	23.4%
TOTAL				
Count	268	14	14	64
Row Percent	74.4%	3.9%	3.9%	17.8%
Column Percent	100.0%	100.0%	100.0%	100.0%

Table B-2b Continued

PHD CHEMISTRY GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1989 and CITIZENSHIP
1989 Starting Salary Survey

	CITIZENSHIP			
	U.S. NATIVE	U.S. NATURAL-IZED	U.S. PERMANENT RESIDENT	OTHER VISA
PURSUE ADVANCED STUDIES IN FALL 89				
YES, FULL-TIME				
Count	31	3	0	22
Row Percent	55.4%	5.4%	.0%	39.3%
Column Percent	8.2%	17.6%	.0%	19.5%
YES, PART-TIME				
Count	8	0	0	4
Row Percent	66.7%	.0%	.0%	33.3%
Column Percent	2.1%	.0%	.0%	3.5%
NO				
Count	337	14	16	87
Row Percent	74.2%	3.1%	3.5%	19.2%
Column Percent	89.6%	82.4%	100.0%	77.0%
TOTAL				
Count	376	17	16	113
Row Percent	72.0%	3.3%	3.1%	21.6%
Column Percent	100.0%	100.0%	100.0%	100.0%

Table B-3a

BS CHEMISTRY GRADUATES
by EMPLOYMENT STATUS and ETHNICITY
1989 Starting Salary Survey

	RACE OR ETHNIC GROUP							
	AMER INDIAN	CHINESE	SUBCONT INDIAN	OTHER ASIAN	BLACK	HISP	WHITE	OTHER
EMPLOYMENT STATUS								
FULL-TIME IN CHEMISTRY								
Count	3	2	5	16	11	13	441	5
Row Percent	.6%	.4%	1.0%	3.2%	2.2%	2.6%	88.9%	1.0%
Column Percent	33.3%	14.3%	15.6%	33.3%	28.9%	40.6%	35.3%	31.3%
FULL-TIME IN NON-CHEMISTRY								
Count	0	1	4	3	1	3	125	2
Row Percent	.0%	.7%	2.9%	2.2%	.7%	2.2%	89.9%	1.4%
Column Percent	.0%	7.1%	12.5%	6.3%	2.6%	9.4%	10.0%	12.5%
FELLOWSHIP								
Count	2	3	13	10	9	6	399	4
Row Percent	.4%	.7%	2.9%	2.2%	2.0%	1.3%	89.5%	.9%
Column Percent	22.2%	21.4%	40.6%	20.8%	23.7%	18.8%	31.9%	25.0%
SEEKING EMPLOYMENT								
Count	2	2	5	4	10	3	95	3
Row Percent	1.6%	1.6%	4.0%	3.2%	8.1%	2.4%	76.6%	2.4%
Column Percent	22.2%	14.3%	15.6%	8.3%	26.3%	9.4%	7.6%	18.8%
NOT SEEKING EMPLOYMENT								
Count	2	6	5	15	7	7	191	2
Row Percent	.9%	2.6%	2.1%	6.4%	3.0%	3.0%	81.3%	.9%
Column Percent	22.2%	42.9%	15.6%	31.3%	18.4%	21.9%	15.3%	12.5%
TOTAL								
Count	9	14	32	48	38	32	1251	16
Row Percent	.6%	1.0%	2.2%	3.3%	2.6%	2.2%	86.9%	1.1%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table B-3a Continued

MS CHEMISTRY GRADUATES
by EMPLOYMENT STATUS and ETHNICITY
1989 Starting Salary Survey

	RACE OR ETHNIC GROUP							
	AMER INDIAN	CHINESE	SUBCONT INDIAN	OTHER ASIAN	BLACK	HISP	WHITE	OTHER
EMPLOYMENT STATUS								
FULL-TIME IN CHEMISTRY								
Count	0	1	18	6	3	2	142	1
Row Percent	.0%	.6%	10.4%	3.5%	1.7%	1.2%	82.1%	.6%
Column Percent	.0%	25.0%	38.3%	33.3%	37.5%	22.2%	55.5%	50.0%
FULL-TIME IN NON-CHEMISTRY								
Count	0	0	0	1	0	2	16	0
Row Percent	.0%	.0%	.0%	5.3%	.0%	10.5%	84.2%	.0%
Column Percent	.0%	.0%	.0%	5.6%	.0%	22.2%	6.3%	.0%
FELLOWSHIP								
Count	1	2	24	9	5	4	80	1
Row Percent	.8%	1.6%	19.0%	7.1%	4.0%	3.2%	63.5%	.8%
Column Percent	100.0%	50.0%	51.1%	50.0%	62.5%	44.4%	31.3%	50.0%
SEEKING EMPLOYMENT								
Count	0	1	3	2	0	0	6	0
Row Percent	.0%	8.3%	25.0%	16.7%	.0%	.0%	50.0%	.0%
Column Percent	.0%	25.0%	6.4%	11.1%	.0%	.0%	2.3%	.0%
NOT SEEKING EMPLOYMENT								
Count	0	0	2	0	0	1	12	0
Row Percent	.0%	.0%	13.3%	.0%	.0%	6.7%	80.0%	.0%
Column Percent	.0%	.0%	4.3%	.0%	.0%	11.1%	4.7%	.0%
TOTAL								
Count	1	4	47	18	8	9	256	2
Row Percent	.3%	1.2%	13.6%	5.2%	2.3%	2.6%	74.2%	.6%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table B-3a Continued

PHD CHEMISTRY GRADUATES
by EMPLOYMENT STATUS and ETHNICITY
1989 Starting Salary Survey

	RACE OR ETHNIC GROUP							
	AMER INDIAN	CHINESE	SUBCONT INDIAN	OTHER ASIAN	BLACK	HISP	WHITE	OTHER
EMPLOYMENT STATUS								
FULL-TIME IN CHEMISTRY								
Count	0	5	20	12	3	7	213	0
Row Percent	.0%	1.9%	7.7%	4.6%	1.2%	2.7%	81.9%	.0%
Column Percent	.0%	45.5%	26.7%	34.3%	42.9%	58.3%	54.2%	.0%
FULL-TIME IN NON-CHEMISTRY								
Count	0	0	3	2	0	0	15	0
Row Percent	.0%	.0%	15.0%	10.0%	.0%	.0%	75.0%	.0%
Column Percent	.0%	.0%	4.0%	5.7%	.0%	.0%	3.8%	.0%
FELLOWSHIP								
Count	0	4	44	18	3	3	141	4
Row Percent	.0%	1.8%	20.3%	8.3%	1.4%	1.4%	65.0%	1.8%
Column Percent	.0%	36.4%	58.7%	51.4%	42.9%	25.0%	35.9%	100.0%
SEEKING EMPLOYMENT								
Count	0	2	8	2	1	2	18	0
Row Percent	.0%	6.1%	24.2%	6.1%	3.0%	6.1%	54.5%	.0%
Column Percent	.0%	18.2%	10.7%	5.7%	14.3%	16.7%	4.6%	.0%
NOT SEEKING EMPLOYMENT								
Count	0	0	0	1	0	0	6	0
Row Percent	.0%	.0%	.0%	14.3%	.0%	.0%	85.7%	.0%
Column Percent	.0%	.0%	.0%	2.9%	.0%	.0%	1.5%	.0%
TOTAL								
Count	0	11	75	35	7	12	393	4
Row Percent	.0%	2.0%	14.0%	6.5%	1.3%	2.2%	73.2%	.7%
Column Percent	.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table B-3b

BS CHEMISTRY GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1989 and ETHNICITY
1989 Starting Salary Survey

	RACE OR ETHNIC GROUP							
	AMER INDIAN	CHINESE	SUBCONT INDIAN	OTHER ASIAN	BLACK	HISP	WHITE	OTHER
PURSUE ADVANCED STUDIES IN FALL 89								
YES, FULL-TIME								
Count	4	10	26	37	21	16	727	6
Row Percent	.5%	1.2%	3.1%	4.4%	2.5%	1.9%	85.8%	.7%
Column Percent	44.4%	66.7%	66.7%	58.7%	43.8%	43.2%	50.8%	37.5%
YES, PART-TIME								
Count	2	1	1	5	6	3	154	2
Row Percent	1.1%	.6%	.6%	2.9%	3.4%	1.7%	88.5%	1.1%
Column Percent	22.2%	6.7%	2.6%	7.9%	12.5%	8.1%	10.8%	12.5%
NO								
Count	3	4	12	21	21	18	549	8
Row Percent	.5%	.6%	1.9%	3.3%	3.3%	2.8%	86.3%	1.3%
Column Percent	33.3%	26.7%	30.8%	33.3%	43.8%	48.6%	38.4%	50.0%
TOTAL								
Count	9	15	39	63	48	37	1430	16
Row Percent	.5%	.9%	2.4%	3.8%	2.9%	2.2%	86.3%	1.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table B-3b Continued

MS CHEMISTRY GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1989 and ETHNICITY
1989 Starting Salary Survey

	RACE OR ETHNIC GROUP							
	AMER INDIAN	CHINESE	SUBCONT INDIAN	OTHER ASIAN	BLACK	HISP	WHITE	OTHER
PURSUE ADVANCED STUDIES IN FALL 89								
YES, FULL-TIME								
Count	1	2	31	9	6	4	90	1
Row Percent	.7%	1.4%	21.5%	6.3%	4.2%	2.8%	62.5%	.7%
Column Percent	100.0%	50.0%	60.8%	50.0%	66.7%	44.4%	34.2%	50.0%
YES, PART-TIME								
Count	0	0	2	1	0	3	13	0
Row Percent	.0%	.0%	10.5%	5.3%	.0%	15.8%	68.4%	.0%
Column Percent	.0%	.0%	3.9%	5.6%	.0%	33.3%	4.9%	.0%
NO								
Count	0	2	18	8	3	2	160	1
Row Percent	.0%	1.0%	9.3%	4.1%	1.5%	1.0%	82.5%	.5%
Column Percent	.0%	50.0%	35.3%	44.4%	33.3%	22.2%	60.8%	50.0%
TOTAL								
Count	1	4	51	18	9	9	263	2
Row Percent	.3%	1.1%	14.3%	5.0%	2.5%	2.5%	73.7%	.6%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table B-3b Continued

PHD CHEMISTRY GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1989 and ETHNICITY
1989 Starting Salary Survey

	RACE OR ETHNIC GROUP							
	AMER INDIAN	CHINESE	SUBCONT INDIAN	OTHER ASIAN	BLACK	HISP	WHITE	OTHER
PURSUE ADVANCED STUDIES IN FALL 89								
YES, FULL-TIME								
Count	0	3	13	7	0	2	31	0
Row Percent	.0%	5.4%	23.2%	12.5%	.0%	3.6%	55.4%	.0%
Column Percent	.0%	27.3%	18.3%	21.9%	.0%	14.3%	8.1%	.0%
YES, PART-TIME								
Count	0	0	3	0	1	0	8	0
Row Percent	.0%	.0%	25.0%	.0%	8.3%	.0%	66.7%	.0%
Column Percent	.0%	.0%	4.2%	.0%	14.3%	.0%	2.1%	.0%
NO								
Count	0	8	55	25	6	12	342	5
Row Percent	.0%	1.8%	12.1%	5.5%	1.3%	2.6%	75.5%	1.1%
Column Percent	.0%	72.7%	77.5%	78.1%	85.7%	85.7%	89.8%	100.0%
TOTAL								
Count	0	11	71	32	7	14	381	5
Row Percent	.0%	2.1%	13.6%	6.1%	1.3%	2.7%	73.1%	1.0%
Column Percent	.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table B-4a

BS CHEMISTRY GRADUATES
by EMPLOYMENT STATUS and CERTIFICATION
1989 Starting Salary Survey

	CURRICULUM APPROVED?	
	NO	YES
EMPLOYMENT STATUS		
FULL-TIME IN CHEMISTRY		
Count	249	250
Row Percent	49.9%	50.1%
Column Percent	32.4%	36.9%
FULL-TIME IN NON-CHEMISTRY		
Count	85	55
Row Percent	60.7%	39.3%
Column Percent	11.1%	8.1%
FELLOWSHIP		
Count	177	271
Row Percent	39.5%	60.5%
Column Percent	23.0%	40.0%
SEEKING EMPLOYMENT		
Count	80	44
Row Percent	64.5%	35.5%
Column Percent	10.4%	6.5%
NOT SEEKING EMPLOYMENT		
Count	177	58
Row Percent	75.3%	24.7%
Column Percent	23.0%	8.6%
TOTAL		
Count	768	678
Row Percent	53.1%	46.9%
Column Percent	100.0%	100.0%

Table B-4b

BS CHEMISTRY GRADUATES
by PLANS FOR FURTHER STUDIES AND CERTIFICATION
1989 Starting Salary Survey

	CURRICULUM APPROVED?	
	NO	YES
PURSUE ADVANCED STUDIES IN FALL 89		
YES, FULL-TIME		
Count	475	375
Row Percent	55.9%	44.1%
Column Percent	51.1%	51.0%
YES, PART-TIME		
Count	89	85
Row Percent	51.1%	48.9%
Column Percent	9.6%	11.5%
NO		
Count	365	276
Row Percent	56.9%	43.1%
Column Percent	39.3%	37.5%
TOTAL		
Count	929	736
Row Percent	55.8%	44.2%
Column Percent	100.0%	100.0%

Table B-5

MASTERS CHEMISTRY GRADUATES
by EMPLOYMENT STATUS and DEGREE SPECIALTY
1989 Starting Salary Survey

	EMPLOYMENT STATUS					TOTAL
	FT IN CHEM	FT IN NONCHEM	FELLOW-SHIP	SEEKING EMPL	NOT SEEK EMPL	
FIELD OF HIGHEST DEGREE						
BIOCHEMISTRY						
Count	23	2	7	0	5	37
Row Percent	62.2%	5.4%	18.9%	.0%	13.5%	100.0%
Column Percent	13.1%	10.5%	5.6%	.0%	33.3%	10.6%
ANALYTICAL CHEM						
Count	42	3	15	4	3	67
Row Percent	62.7%	4.5%	22.4%	6.0%	4.5%	100.0%
Column Percent	23.9%	15.8%	11.9%	33.3%	20.0%	19.3%
INORGANIC CHEM						
Count	22	3	30	1	1	57
Row Percent	38.6%	5.3%	52.6%	1.8%	1.8%	100.0%
Column Percent	12.5%	15.8%	23.8%	8.3%	6.7%	16.4%
ORGANIC CHEM						
Count	59	3	39	4	4	109
Row Percent	54.1%	2.8%	35.8%	3.7%	3.7%	100.0%
Column Percent	33.5%	15.8%	31.0%	33.3%	26.7%	31.3%
PHYSICAL CHEM						
Count	9	2	28	2	2	43
Row Percent	20.9%	4.7%	65.1%	4.7%	4.7%	100.0%
Column Percent	5.1%	10.5%	22.2%	16.7%	13.3%	12.4%
POLYMER CHEM						
Count	12	3	3	0	0	18
Row Percent	66.7%	16.7%	16.7%	.0%	.0%	100.0%
Column Percent	6.8%	15.8%	2.4%	.0%	.0%	5.2%
OTHER CHEM						
Count	9	3	4	1	0	17
Row Percent	52.9%	17.6%	23.5%	5.9%	.0%	100.0%
Column Percent	5.1%	15.8%	3.2%	8.3%	.0%	4.9%
TOTAL						
Count	176	19	126	12	15	348
Row Percent	50.6%	5.5%	36.2%	3.4%	4.3%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table B-6

PHD CHEMISTRY GRADUATES
by EMPLOYMENT STATUS and DEGREE SPECIALTY
1989 Starting Salary Survey

	EMPLOYMENT STATUS					TOTAL
	FT IN CHEM	FT IN NONCHEM	FELLOW-SHIP	SEEKING EMPL	NOT SEEK EMPL	
FIELD OF HIGHEST DEGREE						
BIOCHEMISTRY						
Count	13	1	26	1	1	42
Row Percent	31.0%	2.4%	61.9%	2.4%	2.4%	100.0%
Column Percent	5.0%	5.0%	12.0%	3.0%	14.3%	7.8%
ANALYTICAL CHEM						
Count	79	4	25	5	0	113
Row Percent	69.9%	3.5%	22.1%	4.4%	.0%	100.0%
Column Percent	30.4%	20.0%	11.5%	15.2%	.0%	21.0%
INORGANIC CHEM						
Count	38	2	38	4	2	84
Row Percent	45.2%	2.4%	45.2%	4.8%	2.4%	100.0%
Column Percent	14.6%	10.0%	17.5%	12.1%	28.6%	15.6%
ORGANIC CHEM						
Count	83	1	65	6	2	157
Row Percent	52.9%	.6%	41.4%	3.8%	1.3%	100.0%
Column Percent	31.9%	5.0%	30.0%	18.2%	28.6%	29.2%
PHYSICAL CHEM						
Count	33	9	54	13	1	110
Row Percent	30.0%	8.2%	49.1%	11.8%	.9%	100.0%
Column Percent	12.7%	45.0%	24.9%	39.4%	14.3%	20.5%
POLYMER CHEM						
Count	8	2	2	0	0	12
Row Percent	66.7%	16.7%	16.7%	.0%	.0%	100.0%
Column Percent	3.1%	10.0%	.9%	.0%	.0%	2.2%
OTHER CHEM						
Count	6	1	7	4	1	19
Row Percent	31.6%	5.3%	36.8%	21.1%	5.3%	100.0%
Column Percent	2.3%	5.0%	3.2%	12.1%	14.3%	3.5%
TOTAL						
Count	260	20	217	33	7	537
Row Percent	48.4%	3.7%	40.4%	6.1%	1.3%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table B-7a

CHEMICAL ENGINEERING GRADUATES
by EMPLOYMENT STATUS, SEX, and DEGREE
1989 Starting Salary Survey

	BACHELORS			MASTERS			DOCTORATE		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
FULL-TIME IN CHEMISTRY									
Count	365	200	565	97	28	125	99	15	114
Row Percent	64.6%	35.4%	100.0%	77.6%	22.4%	100.0%	86.8%	13.2%	100.0%
Column Percent	66.7%	72.5%	68.7%	57.4%	50.9%	55.8%	68.3%	65.2%	67.9%
FULL-TIME IN NON-CHEMISTRY									
Count	62	19	81	13	8	21	16	2	18
Row Percent	76.5%	23.5%	100.0%	61.9%	38.1%	100.0%	88.9%	11.1%	100.0%
Column Percent	11.3%	6.9%	9.8%	7.7%	14.5%	9.4%	11.0%	8.7%	10.7%
FELLOWSHIP									
Count	76	40	116	56	13	69	22	2	24
Row Percent	65.5%	34.5%	100.0%	81.2%	18.8%	100.0%	91.7%	8.3%	100.0%
Column Percent	13.9%	14.5%	14.1%	33.1%	23.6%	30.8%	15.2%	8.7%	14.3%
SEEKING EMPLOYMENT									
Count	30	12	42	1	3	4	8	2	10
Row Percent	71.4%	28.6%	100.0%	25.0%	75.0%	100.0%	80.0%	20.0%	100.0%
Column Percent	5.5%	4.3%	5.1%	.6%	5.5%	1.8%	5.5%	8.7%	6.0%
NOT SEEKING EMPLOYMENT									
Count	14	5	19	2	3	5	0	2	2
Row Percent	73.7%	26.3%	100.0%	40.0%	60.0%	100.0%	.0%	100.0%	100.0%
Column Percent	2.6%	1.8%	2.3%	1.2%	5.5%	2.2%	.0%	8.7%	1.2%
TOTAL									
Count	547	276	823	169	55	224	145	23	168
Row Percent	66.5%	33.5%	100.0%	75.4%	24.6%	100.0%	86.3%	13.7%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table B-7b

CHEMICAL ENGINEERING GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1989, SEX, and DEGREE
1989 Starting Salary Survey

	BACHELORS			MASTERS			DOCTORATE		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
PURSUE ADVANCED STUDIES IN FALL 89									
YES, FULL-TIME									
Count	109	49	158	62	14	76	4	0	4
Row Percent	69.0%	31.0%	100.0%	81.6%	18.4%	100.0%	100.0%	.0%	100.0%
Column Percent	19.2%	17.5%	18.6%	35.8%	25.5%	33.3%	2.9%	.0%	2.5%
YES, PART-TIME									
Count	64	37	101	17	5	22	4	1	5
Row Percent	63.4%	36.6%	100.0%	77.3%	22.7%	100.0%	80.0%	20.0%	100.0%
Column Percent	11.3%	13.2%	11.9%	9.8%	9.1%	9.6%	2.9%	4.5%	3.2%
NO									
Count	395	194	589	94	36	130	128	21	149
Row Percent	67.1%	32.9%	100.0%	72.3%	27.7%	100.0%	85.9%	14.1%	100.0%
Column Percent	69.5%	69.3%	69.5%	54.3%	65.5%	57.0%	94.1%	95.5%	94.3%
TOTAL									
Count	568	280	848	173	55	228	136	22	158
Row Percent	67.0%	33.0%	100.0%	75.9%	24.1%	100.0%	86.1%	13.9%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table B-8a

BS CHEMICAL ENGINEERING GRADUATES
by EMPLOYMENT STATUS and CITIZENSHIP
1989 Starting Salary Survey

	CITIZENSHIP			
	U.S. NATIVE	U.S. NATURAL-IZED	U.S. PERMANENT RESIDENT	OTHER VISA
FULL-TIME IN CHEMISTRY				
Count	535	19	9	2
Row Percent	94.7%	3.4%	1.6%	.4%
Column Percent	69.8%	67.9%	52.9%	18.2%
FULL-TIME IN NON-CHEMISTRY				
Count	79	1	0	0
Row Percent	98.8%	1.3%	.0%	.0%
Column Percent	10.3%	3.6%	.0%	.0%
FELLOWSHIP				
Count	101	3	6	6
Row Percent	87.1%	2.6%	5.2%	5.2%
Column Percent	13.2%	10.7%	35.3%	54.5%
SEEKING EMPLOYMENT				
Count	36	2	2	2
Row Percent	85.7%	4.8%	4.8%	4.8%
Column Percent	4.7%	7.1%	11.8%	18.2%
NOT SEEKING EMPLOYMENT				
Count	15	3	0	1
Row Percent	78.9%	15.8%	.0%	5.3%
Column Percent	2.0%	10.7%	.0%	9.1%
TOTAL				
Count	766	28	17	11
Row Percent	93.2%	3.4%	2.1%	1.3%
Column Percent	100.0%	100.0%	100.0%	100.0%

Table B-8a Continued

MS CHEMICAL ENGINEERING GRADUATES
by EMPLOYMENT STATUS and CITIZENSHIP
1989 Starting Salary Survey

	CITIZENSHIP			
	U.S. NATIVE	U.S. NATURAL-IZED	U.S. PERMANENT RESIDENT	OTHER VISA
FULL-TIME IN CHEMISTRY				
Count	104	6	7	9
Row Percent	82.5%	4.8%	5.6%	7.1%
Column Percent	65.4%	60.0%	58.3%	20.0%
FULL-TIME IN NON-CHEMISTRY				
Count	15	2	2	2
Row Percent	71.4%	9.5%	9.5%	9.5%
Column Percent	9.4%	20.0%	16.7%	4.4%
FELLOWSHIP				
Count	34	2	1	32
Row Percent	49.3%	2.9%	1.4%	46.4%
Column Percent	21.4%	20.0%	8.3%	71.1%
SEEKING EMPLOYMENT				
Count	1	0	2	2
Row Percent	20.0%	.0%	40.0%	40.0%
Column Percent	.6%	.0%	16.7%	4.4%
NOT SEEKING EMPLOYMENT				
Count	5	0	0	0
Row Percent	100.0%	.0%	.0%	.0%
Column Percent	3.1%	.0%	.0%	.0%
TOTAL				
Count	159	10	12	45
Row Percent	70.4%	4.4%	5.3%	19.9%
Column Percent	100.0%	100.0%	100.0%	100.0%

Table B-8a Continued

PHD CHEMICAL ENGINEERING GRADUATES
by EMPLOYMENT STATUS and CITIZENSHIP
1989 Starting Salary Survey

	CITIZENSHIP			
	U.S. NATIVE	U.S. NATURAL-IZED	U.S. PERMANENT RESIDENT	OTHER VISA
FULL-TIME IN CHEMISTRY				
Count	85	5	8	16
Row Percent	74.6%	4.4%	7.0%	14.0%
Column Percent	73.9%	100.0%	72.7%	44.4%
FULL-TIME IN NON-CHEMISTRY				
Count	12	0	0	5
Row Percent	70.6%	.0%	.0%	29.4%
Column Percent	10.4%	.0%	.0%	13.9%
FELLOWSHIP				
Count	12	0	1	11
Row Percent	50.0%	.0%	4.2%	45.8%
Column Percent	10.4%	.0%	9.1%	30.6%
SEEKING EMPLOYMENT				
Count	5	0	1	4
Row Percent	50.0%	.0%	10.0%	40.0%
Column Percent	4.3%	.0%	9.1%	11.1%
NOT SEEKING EMPLOYMENT				
Count	1	0	1	0
Row Percent	50.0%	.0%	50.0%	.0%
Column Percent	.9%	.0%	9.1%	.0%
TOTAL				
Count	115	5	11	36
Row Percent	68.9%	3.0%	6.6%	21.6%
Column Percent	100.0%	100.0%	100.0%	100.0%

Table B-8b

BS CHEMICAL ENGINEERING GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1989 and CITIZENSHIP
1989 Starting Salary Survey

	CITIZENSHIP			
	U.S. NATIVE	U.S. NATURAL-IZED	U.S. PERMANENT RESIDENT	OTHER VISA
PURSUE ADVANCED STUDIES IN FALL 89				
YES, FULL-TIME				
Count	134	6	9	9
Row Percent	84.8%	3.8%	5.7%	5.7%
Column Percent	17.0%	20.0%	56.3%	69.2%
YES, PART-TIME				
Count	92	7	2	0
Row Percent	91.1%	6.9%	2.0%	.0%
Column Percent	11.7%	23.3%	12.5%	.0%
NO				
Count	561	17	5	4
Row Percent	95.6%	2.9%	.9%	.7%
Column Percent	71.3%	56.7%	31.3%	30.8%
TOTAL				
Count	787	30	16	13
Row Percent	93.0%	3.5%	1.9%	1.5%
Column Percent	100.0%	100.0%	100.0%	100.0%

Table B-8b Continued

MS CHEMICAL ENGINEERING GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1989 and CITIZENSHIP
1989 Starting Salary Survey

	CITIZENSHIP			
	U.S. NATIVE	U.S. NATURAL-IZED	U.S. PERMANENT RESIDENT	OTHER VISA
PURSUE ADVANCED STUDIES IN FALL 89				
YES, FULL-TIME				
Count	36	2	1	38
Row Percent	46.8%	2.6%	1.3%	49.4%
Column Percent	22.6%	20.0%	8.3%	77.6%
YES, PART-TIME				
Count	16	2	3	1
Row Percent	72.7%	9.1%	13.6%	4.5%
Column Percent	10.1%	20.0%	25.0%	2.0%
NO				
Count	107	6	8	10
Row Percent	81.7%	4.6%	6.1%	7.6%
Column Percent	67.3%	60.0%	66.7%	20.4%
TOTAL				
Count	159	10	12	49
Row Percent	69.1%	4.3%	5.2%	21.3%
Column Percent	100.0%	100.0%	100.0%	100.0%

Table B-8b Continued

PHD CHEMICAL ENGINEERING GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1989 and CITIZENSHIP
1989 Starting Salary Survey

	CITIZENSHIP			
	U.S. NATIVE	U.S. NATURAL-IZED	U.S. PERMANENT RESIDENT	OTHER VISA
PURSUE ADVANCED STUDIES IN FALL 89				
YES, FULL-TIME				
Count	2	1	0	1
Row Percent	50.0%	25.0%	.0%	25.0%
Column Percent	1.8%	20.0%	.0%	3.0%
YES, PART-TIME				
Count	3	0	0	1
Row Percent	75.0%	.0%	.0%	25.0%
Column Percent	2.7%	.0%	.0%	3.0%
NO				
Count	105	4	9	31
Row Percent	70.5%	2.7%	6.0%	20.8%
Column Percent	95.5%	80.0%	100.0%	93.9%
TOTAL				
Count	110	5	9	33
Row Percent	70.1%	3.2%	5.7%	21.0%
Column Percent	100.0%	100.0%	100.0%	100.0%

Table B-9a

BS CHEMICAL ENGINEERING GRADUATES
by EMPLOYMENT STATUS and ETHNICITY
1989 Starting Salary Survey

	RACE OR ETHNIC GROUP							
	AMER INDIAN	CHINESE	SUBCONT INDIAN	OTHER ASIAN	BLACK	HISP	WHITE	OTHER
FULL-TIME IN CHEMISTRY								
Count	4	4	13	15	13	14	496	4
Row Percent	.7%	.7%	2.3%	2.7%	2.3%	2.5%	88.1%	.7%
Column Percent	57.1%	80.0%	54.2%	53.6%	52.0%	73.7%	70.6%	57.1%
FULL-TIME IN NON-CHEMISTRY								
Count	2	0	1	2	3	3	69	1
Row Percent	2.5%	.0%	1.2%	2.5%	3.7%	3.7%	85.2%	1.2%
Column Percent	28.6%	.0%	4.2%	7.1%	12.0%	15.8%	9.8%	14.3%
FELLOWSHIP								
Count	1	1	8	7	3	1	91	2
Row Percent	.9%	.9%	7.0%	6.1%	2.6%	.9%	79.8%	1.8%
Column Percent	14.3%	20.0%	33.3%	25.0%	12.0%	5.3%	12.9%	28.6%
SEEKING EMPLOYMENT								
Count	0	0	2	1	2	1	35	0
Row Percent	.0%	.0%	4.9%	2.4%	4.9%	2.4%	85.4%	.0%
Column Percent	.0%	.0%	8.3%	3.6%	8.0%	5.3%	5.0%	.0%
NOT SEEKING EMPLOYMENT								
Count	0	0	0	3	4	0	12	0
Row Percent	.0%	.0%	.0%	15.8%	21.1%	.0%	63.2%	.0%
Column Percent	.0%	.0%	.0%	10.7%	16.0%	.0%	1.7%	.0%
TOTAL								
Count	7	5	24	28	25	19	703	7
Row Percent	.9%	.6%	2.9%	3.4%	3.1%	2.3%	85.9%	.9%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table B-9a Continued

MS CHEMICAL ENGINEERING GRADUATES
by EMPLOYMENT STATUS and ETHNICITY
1989 Starting Salary Survey

	RACE OR ETHNIC GROUP							
	AMER INDIAN	CHINESE	SUBCONT INDIAN	OTHER ASIAN	BLACK	HISP	WHITE	OTHER
FULL-TIME IN CHEMISTRY								
Count	1	6	0	6	5	3	103	2
Row Percent	.8%	4.8%	.0%	4.8%	4.0%	2.4%	81.7%	1.6%
Column Percent	100.0%	40.0%	.0%	31.6%	71.4%	50.0%	62.0%	66.7%
FULL-TIME IN NON-CHEMISTRY								
Count	0	1	2	2	0	1	13	1
Row Percent	.0%	5.0%	10.0%	10.0%	.0%	5.0%	65.0%	5.0%
Column Percent	.0%	6.7%	28.6%	10.5%	.0%	16.7%	7.8%	33.3%
FELLOWSHIP								
Count	0	8	3	11	2	0	44	0
Row Percent	.0%	11.8%	4.4%	16.2%	2.9%	.0%	64.7%	.0%
Column Percent	.0%	53.3%	42.9%	57.9%	28.6%	.0%	26.5%	.0%
SEEKING EMPLOYMENT								
Count	0	0	2	0	0	2	1	0
Row Percent	.0%	.0%	40.0%	.0%	.0%	40.0%	20.0%	.0%
Column Percent	.0%	.0%	28.6%	.0%	.0%	33.3%	.6%	.0%
NOT SEEKING EMPLOYMENT								
Count	0	0	0	0	0	0	5	0
Row Percent	.0%	.0%	.0%	.0%	.0%	.0%	100.0%	.0%
Column Percent	.0%	.0%	.0%	.0%	.0%	.0%	3.0%	.0%
TOTAL								
Count	1	15	7	19	7	6	166	3
Row Percent	.4%	6.7%	3.1%	8.5%	3.1%	2.7%	74.1%	1.3%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table B-9a Continued

PHD CHEMICAL ENGINEERING GRADUATES
by EMPLOYMENT STATUS and ETHNICITY
1989 Starting Salary Survey

	RACE OR ETHNIC GROUP							
	AMER INDIAN	CHINESE	SUBCONT INDIAN	OTHER ASIAN	BLACK	HISP	WHITE	OTHER
FULL-TIME IN CHEMISTRY								
Count	0	6	11	5	1	1	87	1
Row Percent	.0%	5.4%	9.8%	4.5%	.9%	.9%	77.7%	.9%
Column Percent	.0%	42.9%	64.7%	55.6%	100.0%	50.0%	71.9%	100.0%
FULL-TIME IN NON-CHEMISTRY								
Count	0	2	2	0	0	0	13	0
Row Percent	.0%	11.8%	11.8%	.0%	.0%	.0%	76.5%	.0%
Column Percent	.0%	14.3%	11.8%	.0%	.0%	.0%	10.7%	.0%
FELLOWSHIP								
Count	0	6	3	2	0	0	13	0
Row Percent	.0%	25.0%	12.5%	8.3%	.0%	.0%	54.2%	.0%
Column Percent	.0%	42.9%	17.6%	22.2%	.0%	.0%	10.7%	.0%
SEEKING EMPLOYMENT								
Count	0	0	1	2	0	0	7	0
Row Percent	.0%	.0%	10.0%	20.0%	.0%	.0%	70.0%	.0%
Column Percent	.0%	.0%	5.9%	22.2%	.0%	.0%	5.8%	.0%
NOT SEEKING EMPLOYMENT								
Count	0	0	0	0	0	1	1	0
Row Percent	.0%	.0%	.0%	.0%	.0%	50.0%	50.0%	.0%
Column Percent	.0%	.0%	.0%	.0%	.0%	50.0%	.8%	.0%
TOTAL								
Count	0	14	17	9	1	2	121	1
Row Percent	.0%	8.5%	10.3%	5.5%	.6%	1.2%	73.3%	.6%
Column Percent	.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table B-9b

BS CHEMICAL ENGINEERING GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1989 and ETHNICITY
1989 Starting Salary Survey

	RACE OR ETHNIC GROUP							
	AMER INDIAN	CHINESE	SUBCONT INDIAN	OTHER ASIAN	BLACK	HISP	WHITE	OTHER
PURSUE ADVANCED STUDIES IN FALL 89								
YES, FULL-TIME								
Count	1	1	9	11	8	1	122	3
Row Percent	.6%	.6%	5.8%	7.1%	5.1%	.6%	78.2%	1.9%
Column Percent	14.3%	20.0%	37.5%	36.7%	30.8%	5.3%	16.9%	37.5%
YES, PART-TIME								
Count	2	2	4	2	3	2	85	1
Row Percent	2.0%	2.0%	4.0%	2.0%	3.0%	2.0%	84.2%	1.0%
Column Percent	28.6%	40.0%	16.7%	6.7%	11.5%	10.5%	11.8%	12.5%
NO								
Count	4	2	11	17	15	16	516	4
Row Percent	.7%	.3%	1.9%	2.9%	2.6%	2.7%	88.2%	.7%
Column Percent	57.1%	40.0%	45.8%	56.7%	57.7%	84.2%	71.4%	50.0%
TOTAL								
Count	7	5	24	30	26	19	723	8
Row Percent	.8%	.6%	2.9%	3.6%	3.1%	2.3%	85.9%	1.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table B-9b Continued

MS CHEMICAL ENGINEERING GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1989 and ETHNICITY
1989 Starting Salary Survey

	RACE OR ETHNIC GROUP							
	AMER INDIAN	CHINESE	SUBCONT INDIAN	OTHER ASIAN	BLACK	HISP	WHITE	OTHER
PURSUE ADVANCED STUDIES IN FALL 89								
YES, FULL-TIME								
Count	0	8	8	11	2	0	47	0
Row Percent	.0%	10.5%	10.5%	14.5%	2.6%	.0%	61.8%	.0%
Column Percent	.0%	53.3%	80.0%	57.9%	28.6%	.0%	28.1%	.0%
YES, PART-TIME								
Count	0	2	0	1	2	1	14	1
Row Percent	.0%	9.5%	.0%	4.8%	9.5%	4.8%	66.7%	4.8%
Column Percent	.0%	13.3%	.0%	5.3%	28.6%	16.7%	8.4%	33.3%
NO								
Count	1	5	2	7	3	5	106	2
Row Percent	.8%	3.8%	1.5%	5.3%	2.3%	3.8%	80.9%	1.5%
Column Percent	100.0%	33.3%	20.0%	36.8%	42.9%	83.3%	63.5%	66.7%
TOTAL								
Count	1	15	10	19	7	6	167	3
Row Percent	.4%	6.6%	4.4%	8.3%	3.1%	2.6%	73.2%	1.3%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table B-9b Continued

PHD CHEMICAL ENGINEERING GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1989 and ETHNICITY
1989 Starting Salary Survey

	RACE OR ETHNIC GROUP							
	AMER INDIAN	CHINESE	SUBCONT INDIAN	OTHER ASIAN	BLACK	HISP	WHITE	OTHER
PURSUE ADVANCED STUDIES IN FALL 89								
YES, FULL-TIME								
Count	0	0	0	0	0	1	3	0
Row Percent	.0%	.0%	.0%	.0%	.0%	25.0%	75.0%	.0%
Column Percent	.0%	.0%	.0%	.0%	.0%	50.0%	2.6%	.0%
YES, PART-TIME								
Count	0	0	0	0	0	0	3	0
Row Percent	.0%	.0%	.0%	.0%	.0%	.0%	100.0%	.0%
Column Percent	.0%	.0%	.0%	.0%	.0%	.0%	2.6%	.0%
NO								
Count	0	12	16	7	1	1	110	1
Row Percent	.0%	8.1%	10.8%	4.7%	.7%	.7%	74.3%	.7%
Column Percent	.0%	100.0%	100.0%	100.0%	100.0%	50.0%	94.8%	100.0%
TOTAL								
Count	0	12	16	7	1	2	116	1
Row Percent	.0%	7.7%	10.3%	4.5%	.6%	1.3%	74.8%	.6%
Column Percent	.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table C-1

BS CHEMISTRY GRADUATES WHO PLAN PART-TIME STUDIES IN FALL 1989
by FIELD OF ADVANCED STUDY and SEX
1989 Starting Salary Survey

	SEX		TOTAL
	MEN	WOMEN	
FIELD OF FURTHER STUDIES			
CHEMISTRY	41	19	60
Row Percent	68.3%	31.7%	100.0%
Column Percent	38.0%	29.2%	34.7%
PHYSICAL SCI OR MATH	6	4	10
Row Percent	60.0%	40.0%	100.0%
Column Percent	5.6%	6.2%	5.8%
CHEM OR BIOCHEM ENG	8	2	10
Row Percent	80.0%	20.0%	100.0%
Column Percent	7.4%	3.1%	5.8%
OTHER ENGINEERING	4	0	4
Row Percent	100.0%	.0%	100.0%
Column Percent	3.7%	.0%	2.3%
BIOCHEMISTRY	4	5	9
Row Percent	44.4%	55.6%	100.0%
Column Percent	3.7%	7.7%	5.2%
LIFE SCIENCE	3	3	6
Row Percent	50.0%	50.0%	100.0%
Column Percent	2.8%	4.6%	3.5%
MEDICINE	9	7	16
Row Percent	56.3%	43.8%	100.0%
Column Percent	8.3%	10.8%	9.2%
PHARMACY	0	4	4
Row Percent	.0%	100.0%	100.0%
Column Percent	.0%	6.2%	2.3%
BUSINESS MANAGEMENT	21	9	30
Row Percent	70.0%	30.0%	100.0%
Column Percent	19.4%	13.8%	17.3%
EDUCATION	2	2	4
Row Percent	50.0%	50.0%	100.0%
Column Percent	1.9%	3.1%	2.3%
LAW	5	1	6
Row Percent	83.3%	16.7%	100.0%
Column Percent	4.6%	1.5%	3.5%
OTHER	5	9	14
Row Percent	35.7%	64.3%	100.0%
Column Percent	4.6%	13.8%	8.1%
TOTAL	108	65	173
Row Percent	62.4%	37.6%	100.0%
Column Percent	100.0%	100.0%	100.0%

Table C-1 Continued

MS CHEMISTRY GRADUATES WHO PLAN PART-TIME STUDIES IN FALL 1989
by FIELD OF ADVANCED STUDY and SEX
1989 Starting Salary Survey

	SEX		TOTAL
	MEN	WOMEN	
FIELD OF FURTHER STUDIES			
CHEMISTRY	5	1	6
Row Percent	83.3%	16.7%	100.0%
Column Percent	41.7%	14.3%	31.6%
OTHER ENGINEERING	1	0	1
Row Percent	100.0%	.0%	100.0%
Column Percent	8.3%	.0%	5.3%
BIOCHEMISTRY	0	1	1
Row Percent	.0%	100.0%	100.0%
Column Percent	.0%	14.3%	5.3%
BUSINESS MANAGEMENT	4	1	5
Row Percent	80.0%	20.0%	100.0%
Column Percent	33.3%	14.3%	26.3%
EDUCATION	0	1	1
Row Percent	.0%	100.0%	100.0%
Column Percent	.0%	14.3%	5.3%
LAW	1	0	1
Row Percent	100.0%	.0%	100.0%
Column Percent	8.3%	.0%	5.3%
OTHER	1	3	4
Row Percent	25.0%	75.0%	100.0%
Column Percent	8.3%	42.9%	21.1%
TOTAL	12	7	19
Row Percent	63.2%	36.8%	100.0%
Column Percent	100.0%	100.0%	100.0%

Table C-1 Continued

PHD CHEMISTRY GRADUATES WHO PLAN PART-TIME STUDIES IN FALL 1989
by FIELD OF ADVANCED STUDY and SEX
1989 Starting Salary Survey

	SEX		TOTAL
	MEN	WOMEN	
FIELD OF FURTHER STUDIES			
BIOCHEMISTRY	2	1	3
Row Percent	66.7%	33.3%	100.0%
Column Percent	33.3%	33.3%	33.3%
MEDICINE	0	0	0
Row Percent	.0%	.0%	.0%
Column Percent	.0%	.0%	.0%
BUSINESS MANAGEMENT	2	2	4
Row Percent	50.0%	50.0%	100.0%
Column Percent	33.3%	66.7%	44.4%
OTHER	2	0	2
Row Percent	100.0%	.0%	100.0%
Column Percent	33.3%	.0%	22.2%
TOTAL	6	3	9
Row Percent	66.7%	33.3%	100.0%
Column Percent	100.0%	100.0%	100.0%

Table C-2

BS CHEMISTRY GRADUATES WHO PLAN PART-TIME STUDIES IN FALL 1989
by FIELD OF ADVANCED STUDIES and CERTIFICATION
1989 Starting Salary Survey

	CURRICULUM APPROVED?		TOTAL
	NO	YES	
FIELD OF FURTHER STUDIES			
CHEMISTRY	27	33	60
Row Percent	45.0%	55.0%	100.0%
Column Percent	30.3%	39.3%	34.7%
PHYSICAL SCI OR MATH	5	5	10
Row Percent	50.0%	50.0%	100.0%
Column Percent	5.6%	6.0%	5.8%
CHEM OR BIOCHEM ENG	4	6	10
Row Percent	40.0%	60.0%	100.0%
Column Percent	4.5%	7.1%	5.8%
OTHER ENGINEERING	1	3	4
Row Percent	25.0%	75.0%	100.0%
Column Percent	1.1%	3.6%	2.3%
BIOCHEMISTRY	3	6	9
Row Percent	33.3%	66.7%	100.0%
Column Percent	3.4%	7.1%	5.2%
LIFE SCIENCE	6	0	6
Row Percent	100.0%	.0%	100.0%
Column Percent	6.7%	.0%	3.5%
MEDICINE	12	4	16
Row Percent	75.0%	25.0%	100.0%
Column Percent	13.5%	4.8%	9.2%
PHARMACY	2	2	4
Row Percent	50.0%	50.0%	100.0%
Column Percent	2.2%	2.4%	2.3%
BUSINESS MANAGEMENT	17	13	30
Row Percent	56.7%	43.3%	100.0%
Column Percent	19.1%	15.5%	17.3%
EDUCATION	2	2	4
Row Percent	50.0%	50.0%	100.0%
Column Percent	2.2%	2.4%	2.3%
LAW	2	4	6
Row Percent	33.3%	66.7%	100.0%
Column Percent	2.2%	4.8%	3.5%
OTHER	8	6	14
Row Percent	57.1%	42.9%	100.0%
Column Percent	9.0%	7.1%	8.1%
TOTAL	89	84	173
Row Percent	51.4%	48.6%	100.0%
Column Percent	100.0%	100.0%	100.0%

Table C-3

CHEMICAL ENGINEERING GRADUATES WHO PLAN PART-TIME STUDIES IN FALL 1989
by FIELD OF ADVANCED STUDY, SEX, and DEGREE
1989 Starting Salary Survey

	BS			MS		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
FIELD OF FURTHER STUDIES						
CHEMISTRY	1	1	2	0	1	1
Row Percent	50.0%	50.0%	100.0%	.0%	100.0%	100.0%
Column Percent	1.6%	2.7%	2.0%	.0%	25.0%	4.8%
PHYSICAL SCI OR MATH	4	0	4	0	0	0
Row Percent	100.0%	.0%	100.0%	.0%	.0%	.0%
Column Percent	6.3%	.0%	4.0%	.0%	.0%	.0%
CHEM OR BIOCHEM ENG	20	7	27	8	0	8
Row Percent	74.1%	25.9%	100.0%	100.0%	.0%	100.0%
Column Percent	31.7%	18.9%	27.0%	47.1%	.0%	38.1%
OTHER ENGINEERING	9	4	13	4	2	6
Row Percent	69.2%	30.8%	100.0%	66.7%	33.3%	100.0%
Column Percent	14.3%	10.8%	13.0%	23.5%	50.0%	28.6%
LIFE SCIENCE	0	1	1	0	0	0
Row Percent	.0%	100.0%	100.0%	.0%	.0%	.0%
Column Percent	.0%	2.7%	1.0%	.0%	.0%	.0%
BUSINESS MANAGEMENT	22	19	41	4	0	4
Row Percent	53.7%	46.3%	100.0%	100.0%	.0%	100.0%
Column Percent	34.9%	51.4%	41.0%	23.5%	.0%	19.0%
LAW	2	0	2	0	0	0
Row Percent	100.0%	.0%	100.0%	.0%	.0%	.0%
Column Percent	3.2%	.0%	2.0%	.0%	.0%	.0%
OTHER	5	5	10	1	1	2
Row Percent	50.0%	50.0%	100.0%	50.0%	50.0%	100.0%
Column Percent	7.9%	13.5%	10.0%	5.9%	25.0%	9.5%
TOTAL	63	37	100	17	4	21
Row Percent	63.0%	37.0%	100.0%	81.0%	19.0%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table C-4

BS CHEMISTRY GRADUATES WHO PLAN FULL-TIME STUDIES IN FALL 1989
by FIELD OF ADVANCED STUDY and SEX
1989 Starting Salary Survey

	SEX		TOTAL
	MEN	WOMEN	
FIELD OF FURTHER STUDIES			
CHEMISTRY	208	113	321
Row Percent	64.8%	35.2%	100.0%
Column Percent	38.2%	37.7%	38.0%
PHYSICAL SCI OR MATH	7	4	11
Row Percent	63.6%	36.4%	100.0%
Column Percent	1.3%	1.3%	1.3%
CHEM OR BIOCHEM ENG	11	1	12
Row Percent	91.7%	8.3%	100.0%
Column Percent	2.0%	.3%	1.4%
OTHER ENGINEERING	9	1	10
Row Percent	90.0%	10.0%	100.0%
Column Percent	1.7%	.3%	1.2%
BIOCHEMISTRY	44	40	84
Row Percent	52.4%	47.6%	100.0%
Column Percent	8.1%	13.3%	9.9%
LIFE SCIENCE	4	6	10
Row Percent	40.0%	60.0%	100.0%
Column Percent	.7%	2.0%	1.2%
MEDICINE	177	82	259
Row Percent	68.3%	31.7%	100.0%
Column Percent	32.5%	27.3%	30.7%
DENTISTRY	22	4	26
Row Percent	84.6%	15.4%	100.0%
Column Percent	4.0%	1.3%	3.1%
PHARMACY	4	15	19
Row Percent	21.1%	78.9%	100.0%
Column Percent	.7%	5.0%	2.2%
BUSINESS MANAGEMENT	4	4	8
Row Percent	50.0%	50.0%	100.0%
Column Percent	.7%	1.3%	.9%
EDUCATION	5	6	11
Row Percent	45.5%	54.5%	100.0%
Column Percent	.9%	2.0%	1.3%
LAW	12	2	14
Row Percent	85.7%	14.3%	100.0%
Column Percent	2.2%	.7%	1.7%
OTHER	38	22	60
Row Percent	63.3%	36.7%	100.0%
Column Percent	7.0%	7.3%	7.1%
TOTAL	545	300	845
Row Percent	64.5%	35.5%	100.0%
Column Percent	100.0%	100.0%	100.0%

Table C-4 Continued

MS CHEMISTRY GRADUATES WHO PLAN FULL-TIME STUDIES IN FALL 1989
by FIELD OF ADVANCED STUDY and SEX
1989 Starting Salary Survey

	SEX		TOTAL
	MEN	WOMEN	
FIELD OF FURTHER STUDIES			
CHEMISTRY	85	28	113
Row Percent	75.2%	24.8%	100.0%
Column Percent	80.2%	75.7%	79.0%
PHYSICAL SCI OR MATH	2	0	2
Row Percent	100.0%	.0%	100.0%
Column Percent	1.9%	.0%	1.4%
OTHER ENGINEERING	2	0	2
Row Percent	100.0%	.0%	100.0%
Column Percent	1.9%	.0%	1.4%
BIOCHEMISTRY	8	1	9
Row Percent	88.9%	11.1%	100.0%
Column Percent	7.5%	2.7%	6.3%
LIFE SCIENCE	1	0	1
Row Percent	100.0%	.0%	100.0%
Column Percent	.9%	.0%	.7%
MEDICINE	2	3	5
Row Percent	40.0%	60.0%	100.0%
Column Percent	1.9%	8.1%	3.5%
PHARMACY	1	2	3
Row Percent	33.3%	66.7%	100.0%
Column Percent	.9%	5.4%	2.1%
EDUCATION	0	1	1
Row Percent	.0%	100.0%	100.0%
Column Percent	.0%	2.7%	.7%
LAW	2	0	2
Row Percent	100.0%	.0%	100.0%
Column Percent	1.9%	.0%	1.4%
OTHER	3	2	5
Row Percent	60.0%	40.0%	100.0%
Column Percent	2.8%	5.4%	3.5%
TOTAL	106	37	143
Row Percent	74.1%	25.9%	100.0%
Column Percent	100.0%	100.0%	100.0%

Table C-4 Continued

PHD CHEMISTRY GRADUATES WHO PLAN FULL-TIME STUDIES IN FALL 1989
by FIELD OF ADVANCED STUDY and SEX
1989 Starting Salary Survey

	SEX		TOTAL
	MEN	WOMEN	
FIELD OF FURTHER STUDIES			
CHEMISTRY	29	5	34
Row Percent	85.3%	14.7%	100.0%
Column Percent	69.0%	41.7%	63.0%
PHYSICAL SCI OR MATH	3	0	3
Row Percent	100.0%	.0%	100.0%
Column Percent	7.1%	.0%	5.6%
OTHER ENGINEERING	1	0	1
Row Percent	100.0%	.0%	100.0%
Column Percent	2.4%	.0%	1.9%
BIOCHEMISTRY	5	5	10
Row Percent	50.0%	50.0%	100.0%
Column Percent	11.9%	41.7%	18.5%
LIFE SCIENCE	3	1	4
Row Percent	75.0%	25.0%	100.0%
Column Percent	7.1%	8.3%	7.4%
LAW	1	0	1
Row Percent	100.0%	.0%	100.0%
Column Percent	2.4%	.0%	1.9%
OTHER	0	1	1
Row Percent	.0%	100.0%	100.0%
Column Percent	.0%	8.3%	1.9%
TOTAL	42	12	54
Row Percent	77.8%	22.2%	100.0%
Column Percent	100.0%	100.0%	100.0%

BS CHEMISTRY GRADUATES WHO PLAN FULL-TIME STUDIES IN FALL 1989
by FIELD OF ADVANCED STUDIES and CERTIFICATION
1989 Starting Salary Survey

	CURRICULUM APPROVED?		TOTAL
	NO	YES	
FIELD OF FURTHER STUDIES			
CHEMISTRY	98	223	321
Row Percent	30.5%	69.5%	100.0%
Column Percent	20.7%	59.8%	37.9%
PHYSICAL SCI OR MATH	3	8	11
Row Percent	27.3%	72.7%	100.0%
Column Percent	.6%	2.1%	1.3%
CHEM OR BIOCHEM ENG	5	7	12
Row Percent	41.7%	58.3%	100.0%
Column Percent	1.1%	1.9%	1.4%
OTHER ENGINEERING	4	6	10
Row Percent	40.0%	60.0%	100.0%
Column Percent	.8%	1.6%	1.2%
BIOCHEMISTRY	50	35	85
Row Percent	58.8%	41.2%	100.0%
Column Percent	10.6%	9.4%	10.0%
LIFE SCIENCE	6	4	10
Row Percent	60.0%	40.0%	100.0%
Column Percent	1.3%	1.1%	1.2%
MEDICINE	211	48	259
Row Percent	81.5%	18.5%	100.0%
Column Percent	44.6%	12.9%	30.6%
DENTISTRY	18	8	26
Row Percent	69.2%	30.8%	100.0%
Column Percent	3.8%	2.1%	3.1%
PHARMACY	14	5	19
Row Percent	73.7%	26.3%	100.0%
Column Percent	3.0%	1.3%	2.2%
BUSINESS MANAGEMENT	5	3	8
Row Percent	62.5%	37.5%	100.0%
Column Percent	1.1%	.8%	.9%
EDUCATION	7	4	11
Row Percent	63.6%	36.4%	100.0%
Column Percent	1.5%	1.1%	1.3%
LAW	7	7	14
Row Percent	50.0%	50.0%	100.0%
Column Percent	1.5%	1.9%	1.7%
OTHER	45	15	60
Row Percent	75.0%	25.0%	100.0%
Column Percent	9.5%	4.0%	7.1%
TOTAL	473	373	846
Row Percent	55.9%	44.1%	100.0%
Column Percent	100.0%	100.0%	100.0%

Table C-6

CHEMICAL ENGINEERING GRADUATES WHO PLAN FULL-TIME STUDIES IN FALL 1989
by FIELD OF ADVANCED STUDY, SEX, and DEGREE
1989 Starting Salary Survey

	BS			MS		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
FIELD OF FURTHER STUDIES						
CHEMISTRY	5	1	6	0	1	1
Row Percent	83.3%	16.7%	100.0%	.0%	100.0%	100.0%
Column Percent	4.6%	2.1%	3.9%	.0%	7.1%	1.3%
CHEM OR BIOCHEM ENG	74	35	109	54	13	67
Row Percent	67.9%	32.1%	100.0%	80.6%	19.4%	100.0%
Column Percent	68.5%	74.5%	70.3%	88.5%	92.9%	89.3%
OTHER ENGINEERING	5	4	9	4	0	4
Row Percent	55.6%	44.4%	100.0%	100.0%	.0%	100.0%
Column Percent	4.6%	8.5%	5.8%	6.6%	.0%	5.3%
BIOCHEMISTRY	0	1	1	0	0	0
Row Percent	.0%	100.0%	100.0%	.0%	.0%	.0%
Column Percent	.0%	2.1%	.6%	.0%	.0%	.0%
LIFE SCIENCE	0	1	1	0	0	0
Row Percent	.0%	100.0%	100.0%	.0%	.0%	.0%
Column Percent	.0%	2.1%	.6%	.0%	.0%	.0%
MEDICINE	9	2	11	0	0	0
Row Percent	81.8%	18.2%	100.0%	.0%	.0%	.0%
Column Percent	8.3%	4.3%	7.1%	.0%	.0%	.0%
DENTISTRY	0	1	1	0	0	0
Row Percent	.0%	100.0%	100.0%	.0%	.0%	.0%
Column Percent	.0%	2.1%	.6%	.0%	.0%	.0%
PHARMACY	1	0	1	1	0	1
Row Percent	100.0%	.0%	100.0%	100.0%	.0%	100.0%
Column Percent	.9%	.0%	.6%	1.6%	.0%	1.3%
BUSINESS MANAGEMENT	3	0	3	0	0	0
Row Percent	100.0%	.0%	100.0%	.0%	.0%	.0%
Column Percent	2.8%	.0%	1.9%	.0%	.0%	.0%
LAW	4	1	5	0	0	0
Row Percent	80.0%	20.0%	100.0%	.0%	.0%	.0%
Column Percent	3.7%	2.1%	3.2%	.0%	.0%	.0%
OTHER	7	1	8	2	0	2
Row Percent	87.5%	12.5%	100.0%	100.0%	.0%	100.0%
Column Percent	6.5%	2.1%	5.2%	3.3%	.0%	2.7%
TOTAL	108	47	155	61	14	75
Row Percent	69.7%	30.3%	100.0%	81.3%	18.7%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table C-7

BS CHEMISTRY GRADUATES WHO ARE NOT EMPLOYED and NOT SEEKING EMPLOYMENT
by SEX and PLANS FOR FURTHER STUDIES
1989 Starting Salary Survey

	SEX		TOTAL
	MEN	WOMEN	
PURSUE ADVANCED STUDIES IN FALL 89			
YES, FULL-TIME	126	79	205
Row Percent	61.5%	38.5%	100.0%
Column Percent	90.0%	83.2%	87.2%
YES, PART-TIME	3	7	10
Row Percent	30.0%	70.0%	100.0%
Column Percent	2.1%	7.4%	4.3%
NO	11	9	20
Row Percent	55.0%	45.0%	100.0%
Column Percent	7.9%	9.5%	8.5%
TOTAL	140	95	235
Row Percent	59.6%	40.4%	100.0%
Column Percent	100.0%	100.0%	100.0%

Table C-8

BS CHEMICAL ENGINEERING GRADUATES
WHO ARE NOT EMPLOYED and NOT SEEKING EMPLOYMENT
by SEX and PLANS FOR FURTHER STUDIES
1989 Starting Salary Survey

	SEX		TOTAL
	MEN	WOMEN	
PURSUE ADVANCED STUDIES IN FALL 89			
YES, FULL-TIME	13	5	18
Row Percent	72.2%	27.8%	100.0%
Column Percent	92.9%	100.0%	94.7%
NO	1	0	1
Row Percent	100.0%	.0%	100.0%
Column Percent	7.1%	.0%	5.3%
TOTAL	14	5	19
Row Percent	73.7%	26.3%	100.0%
Column Percent	100.0%	100.0%	100.0%

BS CHEMISTRY AND CHEMICAL ENGINEERING GRADUATES
by AGE and SEX
1989 Starting Salary Survey

	FIELD					
	CHEMICAL ENGINEERING			CHEMISTRY		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
AGE						
20 OR UNDER	0	0	0	10	8	18
Row Percent	.0%	.0%	.0%	55.6%	44.4%	100.0%
Column Percent	.0%	.0%	.0%	1.0%	1.2%	1.1%
21	55	42	97	108	109	217
Row Percent	56.7%	43.3%	100.0%	49.8%	50.2%	100.0%
Column Percent	9.7%	15.0%	11.5%	10.6%	16.9%	13.0%
22	207	120	327	450	308	758
Row Percent	63.3%	36.7%	100.0%	59.4%	40.6%	100.0%
Column Percent	36.5%	42.9%	38.6%	44.1%	47.8%	45.5%
23	169	83	252	190	100	290
Row Percent	67.1%	32.9%	100.0%	65.5%	34.5%	100.0%
Column Percent	29.8%	29.6%	29.8%	18.6%	15.5%	17.4%
24	55	20	75	75	36	111
Row Percent	73.3%	26.7%	100.0%	67.6%	32.4%	100.0%
Column Percent	9.7%	7.1%	8.9%	7.4%	5.6%	6.7%
25	37	4	41	41	12	53
Row Percent	90.2%	9.8%	100.0%	77.4%	22.6%	100.0%
Column Percent	6.5%	1.4%	4.8%	4.0%	1.9%	3.2%
26	12	1	13	33	9	42
Row Percent	92.3%	7.7%	100.0%	78.6%	21.4%	100.0%
Column Percent	2.1%	.4%	1.5%	3.2%	1.4%	2.5%
27	5	0	5	23	12	35
Row Percent	100.0%	.0%	100.0%	65.7%	34.3%	100.0%
Column Percent	.9%	.0%	.6%	2.3%	1.9%	2.1%
28	6	2	8	10	7	17
Row Percent	75.0%	25.0%	100.0%	58.8%	41.2%	100.0%
Column Percent	1.1%	.7%	.9%	1.0%	1.1%	1.0%
29	3	1	4	17	8	25
Row Percent	75.0%	25.0%	100.0%	68.0%	32.0%	100.0%
Column Percent	.5%	.4%	.5%	1.7%	1.2%	1.5%
30 to 34	12	5	17	33	28	61
Row Percent	70.6%	29.4%	100.0%	54.1%	45.9%	100.0%
Column Percent	2.1%	1.8%	2.0%	3.2%	4.3%	3.7%
35 to 39	6	2	8	17	3	20
Row Percent	75.0%	25.0%	100.0%	85.0%	15.0%	100.0%
Column Percent	1.1%	.7%	.9%	1.7%	.5%	1.2%
40 to 49	0	0	0	12	3	15
Row Percent	.0%	.0%	.0%	80.0%	20.0%	100.0%
Column Percent	.0%	.0%	.0%	1.2%	.5%	.9%
50 to 64	0	0	0	1	2	3
Row Percent	.0%	.0%	.0%	33.3%	66.7%	100.0%
Column Percent	.0%	.0%	.0%	.1%	.3%	.2%
TOTAL	567	280	847	1020	645	1665
Row Percent	66.9%	33.1%	100.0%	61.3%	38.7%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table D-2

MS CHEMISTRY AND CHEMICAL ENGINEERING GRADUATES
by AGE and SEX
1989 Starting Salary Survey

	FIELD					
	CHEMICAL ENGINEERING			CHEMISTRY		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
AGE						
21	1	0	1	0	0	0
Row Percent	100.0%	.0%	100.0%	.0%	.0%	.0%
Column Percent	.6%	.0%	.4%	.0%	.0%	.0%
22	3	2	5	2	2	4
Row Percent	60.0%	40.0%	100.0%	50.0%	50.0%	100.0%
Column Percent	1.7%	3.6%	2.2%	.9%	1.6%	1.1%
23	9	8	17	5	8	13
Row Percent	52.9%	47.1%	100.0%	38.5%	61.5%	100.0%
Column Percent	5.2%	14.5%	7.5%	2.1%	6.3%	3.6%
24	32	10	42	27	12	39
Row Percent	76.2%	23.8%	100.0%	69.2%	30.8%	100.0%
Column Percent	18.5%	18.2%	18.4%	11.6%	9.4%	10.8%
25	37	10	47	35	28	63
Row Percent	78.7%	21.3%	100.0%	55.6%	44.4%	100.0%
Column Percent	21.4%	18.2%	20.6%	15.0%	22.0%	17.5%
26	25	7	32	35	18	53
Row Percent	78.1%	21.9%	100.0%	66.0%	34.0%	100.0%
Column Percent	14.5%	12.7%	14.0%	15.0%	14.2%	14.7%
27	16	3	19	28	10	38
Row Percent	84.2%	15.8%	100.0%	73.7%	26.3%	100.0%
Column Percent	9.2%	5.5%	8.3%	12.0%	7.9%	10.6%
28	18	2	20	21	5	26
Row Percent	90.0%	10.0%	100.0%	80.8%	19.2%	100.0%
Column Percent	10.4%	3.6%	8.8%	9.0%	3.9%	7.2%
29	7	4	11	9	8	17
Row Percent	63.6%	36.4%	100.0%	52.9%	47.1%	100.0%
Column Percent	4.0%	7.3%	4.8%	3.9%	6.3%	4.7%
30 to 34	15	8	23	51	20	71
Row Percent	65.2%	34.8%	100.0%	71.8%	28.2%	100.0%
Column Percent	8.7%	14.5%	10.1%	21.9%	15.7%	19.7%
35 to 39	8	1	9	14	9	23
Row Percent	88.9%	11.1%	100.0%	60.9%	39.1%	100.0%
Column Percent	4.6%	1.8%	3.9%	6.0%	7.1%	6.4%
40 to 49	2	0	2	6	7	13
Row Percent	100.0%	.0%	100.0%	46.2%	53.8%	100.0%
Column Percent	1.2%	.0%	.9%	2.6%	5.5%	3.6%
TOTAL	173	55	228	233	127	360
Row Percent	75.9%	24.1%	100.0%	64.7%	35.3%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table D-3

PHD CHEMISTRY and CHEMICAL ENGINEERING GRADUATES
by AGE and SEX
1989 Starting Salary Survey

	FIELD					
	CHEMICAL ENGINEERING			CHEMISTRY		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
AGE						
25	2	0	2	3	2	5
Row Percent	100.0%	.0%	100.0%	60.0%	40.0%	100.0%
Column Percent	1.3%	.0%	1.2%	.8%	1.3%	.9%
26	9	4	13	25	13	38
Row Percent	69.2%	30.8%	100.0%	65.8%	34.2%	100.0%
Column Percent	6.0%	18.2%	7.6%	6.3%	8.7%	6.9%
27	19	3	22	56	29	85
Row Percent	86.4%	13.6%	100.0%	65.9%	34.1%	100.0%
Column Percent	12.7%	13.6%	12.8%	14.0%	19.5%	15.5%
28	33	9	42	89	35	124
Row Percent	78.6%	21.4%	100.0%	71.8%	28.2%	100.0%
Column Percent	22.0%	40.9%	24.4%	22.3%	23.5%	22.6%
29	22	0	22	47	12	59
Row Percent	100.0%	.0%	100.0%	79.7%	20.3%	100.0%
Column Percent	14.7%	.0%	12.8%	11.8%	8.1%	10.8%
30 to 34	50	5	55	132	42	174
Row Percent	90.9%	9.1%	100.0%	75.9%	24.1%	100.0%
Column Percent	33.3%	22.7%	32.0%	33.1%	28.2%	31.8%
35 to 39	14	0	14	33	12	45
Row Percent	100.0%	.0%	100.0%	73.3%	26.7%	100.0%
Column Percent	9.3%	.0%	8.1%	8.3%	8.1%	8.2%
40 to 49	1	0	1	14	3	17
Row Percent	100.0%	.0%	100.0%	82.4%	17.6%	100.0%
Column Percent	.7%	.0%	.6%	3.5%	2.0%	3.1%
50 to 64	0	1	1	0	1	1
Row Percent	.0%	100.0%	100.0%	.0%	100.0%	100.0%
Column Percent	.0%	4.5%	.6%	.0%	.7%	.2%
TOTAL	150	22	172	399	149	548
Row Percent	87.2%	12.8%	100.0%	72.8%	27.2%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table D-4

CHEMISTRY POSTDOCTORAL RECIPIENTS
by AGE and SEX
1989 Starting Salary Survey

	MEN	WOMEN	TOTAL
AGE			
25	2	0	2
Row Percent	100.0%	.0%	100.0%
Column Percent	1.1%	.0%	.9%
26	12	6	18
Row Percent	66.7%	33.3%	100.0%
Column Percent	6.5%	12.5%	7.7%
27	20	10	30
Row Percent	66.7%	33.3%	100.0%
Column Percent	10.8%	20.8%	12.9%
28	45	10	55
Row Percent	81.8%	18.2%	100.0%
Column Percent	24.3%	20.8%	23.6%
29	18	3	21
Row Percent	85.7%	14.3%	100.0%
Column Percent	9.7%	6.3%	9.0%
30 to 34	69	11	80
Row Percent	86.3%	13.8%	100.0%
Column Percent	37.3%	22.9%	34.3%
35 to 39	15	6	21
Row Percent	71.4%	28.6%	100.0%
Column Percent	8.1%	12.5%	9.0%
40 to 49	4	1	5
Row Percent	80.0%	20.0%	100.0%
Column Percent	2.2%	2.1%	2.1%
50 to 64	0	1	1
Row Percent	.0%	100.0%	100.0%
Column Percent	.0%	2.1%	.4%
TOTAL	185	48	233
Row Percent	79.4%	20.6%	100.0%
Column Percent	100.0%	100.0%	100.0%

Table E-1

FULL-TIME EMPLOYED INEXPERIENCED CHEMISTS
by NUMBER OF JOB OFFERS, SEX, and DEGREE
1989 Starting Salary Survey

	BS			MS			PHD		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
OFFERS OF EMPLOYMENT									
1	64	43	107	23	4	27	35	22	57
Row Percent	59.8%	40.2%	100.0%	85.2%	14.8%	100.0%	61.4%	38.6%	100.0%
Column Percent	35.0%	27.7%	31.7%	41.1%	14.8%	32.5%	34.0%	40.0%	36.1%
2	65	46	111	20	8	28	26	8	34
Row Percent	58.6%	41.4%	100.0%	71.4%	28.6%	100.0%	76.5%	23.5%	100.0%
Column Percent	35.5%	29.7%	32.8%	35.7%	29.6%	33.7%	25.2%	14.5%	21.5%
3	28	40	68	8	7	15	27	14	41
Row Percent	41.2%	58.8%	100.0%	53.3%	46.7%	100.0%	65.9%	34.1%	100.0%
Column Percent	15.3%	25.8%	20.1%	14.3%	25.9%	18.1%	26.2%	25.5%	25.9%
4	18	15	33	4	5	9	8	3	11
Row Percent	54.5%	45.5%	100.0%	44.4%	55.6%	100.0%	72.7%	27.3%	100.0%
Column Percent	9.8%	9.7%	9.8%	7.1%	18.5%	10.8%	7.8%	5.5%	7.0%
5	3	6	9	1	1	2	4	4	8
Row Percent	33.3%	66.7%	100.0%	50.0%	50.0%	100.0%	50.0%	50.0%	100.0%
Column Percent	1.6%	3.9%	2.7%	1.8%	3.7%	2.4%	3.9%	7.3%	5.1%
6 or 7	4	4	8	0	2	2	3	3	6
Row Percent	50.0%	50.0%	100.0%	.0%	100.0%	100.0%	50.0%	50.0%	100.0%
Column Percent	2.2%	2.6%	2.4%	.0%	7.4%	2.4%	2.9%	5.5%	3.8%
8 or 9	1	1	2	0	0	0	0	1	1
Row Percent	50.0%	50.0%	100.0%	.0%	.0%	.0%	.0%	100.0%	100.0%
Column Percent	.5%	.6%	.6%	.0%	.0%	.0%	.0%	1.8%	.6%
TOTAL	183	155	338	56	27	83	103	55	158
Row Percent	54.1%	45.9%	100.0%	67.5%	32.5%	100.0%	65.2%	34.8%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table E-2

FULL-TIME EMPLOYED EXPERIENCED CHEMISTS
by NUMBER OF JOB OFFERS, SEX, and DEGREE
1989 Starting Salary Survey

	BS			MS			PHD		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
OFFERS OF EMPLOYMENT									
1	34	22	56	22	13	35	17	15	32
Row Percent	60.7%	39.3%	100.0%	62.9%	37.1%	100.0%	53.1%	46.9%	100.0%
Column Percent	27.9%	36.7%	30.8%	45.8%	36.1%	41.7%	22.7%	50.0%	30.5%
2	37	13	50	10	11	21	20	6	26
Row Percent	74.0%	26.0%	100.0%	47.6%	52.4%	100.0%	76.9%	23.1%	100.0%
Column Percent	30.3%	21.7%	27.5%	20.8%	30.6%	25.0%	26.7%	20.0%	24.8%
3	23	16	39	10	9	19	23	6	29
Row Percent	59.0%	41.0%	100.0%	52.6%	47.4%	100.0%	79.3%	20.7%	100.0%
Column Percent	18.9%	26.7%	21.4%	20.8%	25.0%	22.6%	30.7%	20.0%	27.6%
4	11	7	18	4	2	6	6	0	6
Row Percent	61.1%	38.9%	100.0%	66.7%	33.3%	100.0%	100.0%	.0%	100.0%
Column Percent	9.0%	11.7%	9.9%	8.3%	5.6%	7.1%	8.0%	.0%	5.7%
5	8	0	8	1	0	1	6	1	7
Row Percent	100.0%	.0%	100.0%	100.0%	.0%	100.0%	85.7%	14.3%	100.0%
Column Percent	6.6%	.0%	4.4%	2.1%	.0%	1.2%	8.0%	3.3%	6.7%
6 or 7	6	2	8	1	0	1	2	2	4
Row Percent	75.0%	25.0%	100.0%	100.0%	.0%	100.0%	50.0%	50.0%	100.0%
Column Percent	4.9%	3.3%	4.4%	2.1%	.0%	1.2%	2.7%	6.7%	3.8%
8 or 9	1	0	1	0	0	0	0	0	0
Row Percent	100.0%	.0%	100.0%	.0%	.0%	.0%	.0%	.0%	.0%
Column Percent	.8%	.0%	.5%	.0%	.0%	.0%	.0%	.0%	.0%
10 OR MORE	2	0	2	0	1	1	1	0	1
Row Percent	100.0%	.0%	100.0%	.0%	100.0%	100.0%	100.0%	.0%	100.0%
Column Percent	1.6%	.0%	1.1%	.0%	2.8%	1.2%	1.3%	.0%	1.0%
TOTAL	122	60	182	48	36	84	75	30	105
Row Percent	67.0%	33.0%	100.0%	57.1%	42.9%	100.0%	71.4%	28.6%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table E-3

FULL-TIME EMPLOYED INEXPERIENCED CHEMICAL ENGINEERS
by NUMBER OF JOB OFFERS, SEX, and DEGREE
1989 Starting Salary Survey

	BS			MS			PHD		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
OFFERS OF EMPLOYMENT									
1	77	28	105	14	2	16	20	3	23
Row Percent	73.3%	26.7%	100.0%	87.5%	12.5%	100.0%	87.0%	13.0%	100.0%
Column Percent	28.0%	19.0%	24.9%	25.0%	18.2%	23.9%	28.6%	30.0%	28.8%
2	51	32	83	15	3	18	16	2	18
Row Percent	61.4%	38.6%	100.0%	83.3%	16.7%	100.0%	88.9%	11.1%	100.0%
Column Percent	18.5%	21.8%	19.7%	26.8%	27.3%	26.9%	22.9%	20.0%	22.5%
3	51	32	83	14	3	17	13	3	16
Row Percent	61.4%	38.6%	100.0%	82.4%	17.6%	100.0%	81.3%	18.8%	100.0%
Column Percent	18.5%	21.8%	19.7%	25.0%	27.3%	25.4%	18.6%	30.0%	20.0%
4	26	19	45	6	1	7	11	0	11
Row Percent	57.8%	42.2%	100.0%	85.7%	14.3%	100.0%	100.0%	.0%	100.0%
Column Percent	9.5%	12.9%	10.7%	10.7%	9.1%	10.4%	15.7%	.0%	13.8%
5	20	14	34	3	2	5	4	0	4
Row Percent	58.8%	41.2%	100.0%	60.0%	40.0%	100.0%	100.0%	.0%	100.0%
Column Percent	7.3%	9.5%	8.1%	5.4%	18.2%	7.5%	5.7%	.0%	5.0%
6 or 7	36	17	53	4	0	4	5	2	7
Row Percent	67.9%	32.1%	100.0%	100.0%	.0%	100.0%	71.4%	28.6%	100.0%
Column Percent	13.1%	11.6%	12.6%	7.1%	.0%	6.0%	7.1%	20.0%	8.8%
8 or 9	10	4	14	0	0	0	1	0	1
Row Percent	71.4%	28.6%	100.0%	.0%	.0%	.0%	100.0%	.0%	100.0%
Column Percent	3.6%	2.7%	3.3%	.0%	.0%	.0%	1.4%	.0%	1.3%
10 OR MORE	4	1	5	0	0	0	0	0	0
Row Percent	80.0%	20.0%	100.0%	.0%	.0%	.0%	.0%	.0%	.0%
Column Percent	1.5%	.7%	1.2%	.0%	.0%	.0%	.0%	.0%	.0%
TOTAL	275	147	422	56	11	67	70	10	80
Row Percent	65.2%	34.8%	100.0%	83.6%	16.4%	100.0%	87.5%	12.5%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table E-4

FULL-TIME EMPLOYED EXPERIENCED CHEMICAL ENGINEERS
by NUMBER OF JOB OFFERS, SEX, and DEGREE
1989 Starting Salary Survey

	BS			MS			PHD		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
OFFERS OF EMPLOYMENT									
1	21	8	29	16	4	20	10	3	13
Row Percent	72.4%	27.6%	100.0%	80.0%	20.0%	100.0%	76.9%	23.1%	100.0%
Column Percent	15.9%	11.9%	14.6%	37.2%	22.2%	32.8%	25.0%	42.9%	27.7%
2	25	11	36	13	4	17	14	2	16
Row Percent	69.4%	30.6%	100.0%	76.5%	23.5%	100.0%	87.5%	12.5%	100.0%
Column Percent	18.9%	16.4%	18.1%	30.2%	22.2%	27.9%	35.0%	28.6%	34.0%
3	18	20	38	3	3	6	6	0	6
Row Percent	47.4%	52.6%	100.0%	50.0%	50.0%	100.0%	100.0%	.0%	100.0%
Column Percent	13.6%	29.9%	19.1%	7.0%	16.7%	9.8%	15.0%	.0%	12.8%
4	19	11	30	3	2	5	5	1	6
Row Percent	63.3%	36.7%	100.0%	60.0%	40.0%	100.0%	83.3%	16.7%	100.0%
Column Percent	14.4%	16.4%	15.1%	7.0%	11.1%	8.2%	12.5%	14.3%	12.8%
5	7	6	13	4	2	6	3	1	4
Row Percent	53.8%	46.2%	100.0%	66.7%	33.3%	100.0%	75.0%	25.0%	100.0%
Column Percent	5.3%	9.0%	6.5%	9.3%	11.1%	9.8%	7.5%	14.3%	8.5%
6 or 7	25	7	32	4	0	4	2	0	2
Row Percent	78.1%	21.9%	100.0%	100.0%	.0%	100.0%	100.0%	.0%	100.0%
Column Percent	18.9%	10.4%	16.1%	9.3%	.0%	6.6%	5.0%	.0%	4.3%
8 or 9	16	1	17	0	3	3	0	0	0
Row Percent	94.1%	5.9%	100.0%	.0%	100.0%	100.0%	.0%	.0%	.0%
Column Percent	12.1%	1.5%	8.5%	.0%	16.7%	4.9%	.0%	.0%	.0%
10 OR MORE	1	3	4	0	0	0	0	0	0
Row Percent	25.0%	75.0%	100.0%	.0%	.0%	.0%	.0%	.0%	.0%
Column Percent	.8%	4.5%	2.0%	.0%	.0%	.0%	.0%	.0%	.0%
TOTAL	132	67	199	43	18	61	40	7	47
Row Percent	66.3%	33.7%	100.0%	70.5%	29.5%	100.0%	85.1%	14.9%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table F-1

BS CHEMISTRY GRADUATES
by CITIZENSHIP and ETHNICITY
1989 Starting Salary Survey

	RACE OR ETHNIC GROUP								TOTAL
	AMER INDIAN	CHINESE	SUBCONT INDIAN	OTHER ASIAN	BLACK	HISP	WHITE	OTHER	
CITIZENSHIP									
U.S. NATIVE	9	6	9	21	34	23	1389	9	1500
Row Percent	.6%	.4%	.6%	1.4%	2.3%	1.5%	92.6%	.6%	100.0%
Column Percent	100.0%	40.0%	23.1%	33.3%	69.4%	62.2%	97.1%	56.3%	90.4%
U.S. NATURALIZED	0	7	18	27	3	8	18	2	83
Row Percent	.0%	8.4%	21.7%	32.5%	3.6%	9.6%	21.7%	2.4%	100.0%
Column Percent	.0%	46.7%	46.2%	42.9%	6.1%	21.6%	1.3%	12.5%	5.0%
U.S. PERMANENT RESIDENT	0	2	6	12	5	3	19	4	51
Row Percent	.0%	3.9%	11.8%	23.5%	9.8%	5.9%	37.3%	7.8%	100.0%
Column Percent	.0%	13.3%	15.4%	19.0%	10.2%	8.1%	1.3%	25.0%	3.1%
OTHER VISA	0	0	6	3	7	3	5	1	25
Row Percent	.0%	.0%	24.0%	12.0%	28.0%	12.0%	20.0%	4.0%	100.0%
Column Percent	.0%	.0%	15.4%	4.8%	14.3%	8.1%	.3%	6.3%	1.5%
TOTAL	9	15	39	63	49	37	1431	16	1659
Row Percent	.5%	.9%	2.4%	3.8%	3.0%	2.2%	86.3%	1.0%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table F-1 Continued

MS CHEMISTRY GRADUATES
by CITIZENSHIP and ETHNICITY
1989 Starting Salary Survey

	RACE OR ETHNIC GROUP								TOTAL
	AMER INDIAN	CHINESE	SUBCONT INDIAN	OTHER ASIAN	BLACK	HISP	WHITE	OTHER	
CITIZENSHIP									
U.S. NATIVE	0	0	3	2	2	7	252	0	266
Row Percent	.0%	.0%	1.1%	.8%	.8%	2.6%	94.7%	.0%	100.0%
Column Percent	.0%	.0%	5.9%	11.1%	22.2%	77.8%	95.1%	.0%	74.1%
U.S. NATURALIZED	0	1	6	3	0	0	3	1	14
Row Percent	.0%	7.1%	42.9%	21.4%	.0%	.0%	21.4%	7.1%	100.0%
Column Percent	.0%	25.0%	11.8%	16.7%	.0%	.0%	1.1%	50.0%	3.9%
U.S. PERMANENT RESIDENT	1	2	2	2	2	0	4	1	14
Row Percent	7.1%	14.3%	14.3%	14.3%	14.3%	.0%	28.6%	7.1%	100.0%
Column Percent	100.0%	50.0%	3.9%	11.1%	22.2%	.0%	1.5%	50.0%	3.9%
OTHER VISA	0	1	40	11	5	2	6	0	65
Row Percent	.0%	1.5%	61.5%	16.9%	7.7%	3.1%	9.2%	.0%	100.0%
Column Percent	.0%	25.0%	78.4%	61.1%	55.6%	22.2%	2.3%	.0%	18.1%
TOTAL	1	4	51	18	9	9	265	2	359
Row Percent	.3%	1.1%	14.2%	5.0%	2.5%	2.5%	73.8%	.6%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table F-1 Continued

PHD CHEMISTRY GRADUATES
by CITIZENSHIP and ETHNICITY
1989 Starting Salary Survey

	RACE OR ETHNIC GROUP								TOTAL
	AMER INDIAN	CHINESE	SUBCONT INDIAN	OTHER ASIAN	BLACK	HISP	WHITE	OTHER	
CITIZENSHIP									
U.S. NATIVE	0	0	4	2	2	6	376	5	395
Row Percent	.0%	.0%	1.0%	.5%	.5%	1.5%	95.2%	1.3%	100.0%
Column Percent	.0%	.0%	5.1%	5.6%	28.6%	42.9%	94.0%	83.3%	71.6%
U.S. NATURALIZED	0	1	5	3	1	1	7	0	18
Row Percent	.0%	5.6%	27.8%	16.7%	5.6%	5.6%	38.9%	.0%	100.0%
Column Percent	.0%	9.1%	6.4%	8.3%	14.3%	7.1%	1.8%	.0%	3.3%
U.S. PERMANENT RESIDENT	0	0	10	2	1	2	4	0	19
Row Percent	.0%	.0%	52.6%	10.5%	5.3%	10.5%	21.1%	.0%	100.0%
Column Percent	.0%	.0%	12.8%	5.6%	14.3%	14.3%	1.0%	.0%	3.4%
OTHER VISA	0	10	59	29	3	5	13	1	120
Row Percent	.0%	8.3%	49.2%	24.2%	2.5%	4.2%	10.8%	.8%	100.0%
Column Percent	.0%	90.9%	75.6%	80.6%	42.9%	35.7%	3.3%	16.7%	21.7%
TOTAL	0	11	78	36	7	14	400	6	552
Row Percent	.0%	2.0%	14.1%	6.5%	1.3%	2.5%	72.5%	1.1%	100.0%
Column Percent	.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table F-2

CHEMISTRY GRADUATES
by CITIZENSHIP, SEX, and DEGREE
1989 Starting Salary Survey

	BS			MS			PHD		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
CITIZENSHIP									
U.S. NATIVE	923	583	1506	169	100	269	279	116	395
Row Percent	61.3%	38.7%	100.0%	62.8%	37.2%	100.0%	70.6%	29.4%	100.0%
Column Percent	90.2%	90.7%	90.4%	71.9%	78.7%	74.3%	69.4%	77.9%	71.7%
U.S. NATURALIZED	49	34	83	10	4	14	12	6	18
Row Percent	59.0%	41.0%	100.0%	71.4%	28.6%	100.0%	66.7%	33.3%	100.0%
Column Percent	4.8%	5.3%	5.0%	4.3%	3.1%	3.9%	3.0%	4.0%	3.3%
U.S. PERMANENT RESIDENT	34	18	52	8	6	14	13	6	19
Row Percent	65.4%	34.6%	100.0%	57.1%	42.9%	100.0%	68.4%	31.6%	100.0%
Column Percent	3.3%	2.8%	3.1%	3.4%	4.7%	3.9%	3.2%	4.0%	3.4%
OTHER VISA	17	8	25	48	17	65	98	21	119
Row Percent	68.0%	32.0%	100.0%	73.8%	26.2%	100.0%	82.4%	17.6%	100.0%
Column Percent	1.7%	1.2%	1.5%	20.4%	13.4%	18.0%	24.4%	14.1%	21.6%
TOTAL	1023	643	1666	235	127	362	402	149	551
Row Percent	61.4%	38.6%	100.0%	64.9%	35.1%	100.0%	73.0%	27.0%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table F-3

MINORITY CHEMISTRY GRADUATES
by MINORITY CLASSIFICATION, SEX, AND DEGREE
1989 Starting Salary Survey

	BS			MS			PHD		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
MINORITY CLASSIFICATION									
AMER INDIAN	4	5	9	1	0	1	0	0	0
Row Percent	44.4%	55.6%	100.0%	100.0%	.0%	100.0%	.0%	.0%	.0%
Column Percent	3.1%	5.0%	3.9%	1.5%	.0%	1.1%	.0%	.0%	.0%
CHINESE	9	6	15	4	0	4	8	2	10
Row Percent	60.0%	40.0%	100.0%	100.0%	.0%	100.0%	80.0%	20.0%	100.0%
Column Percent	7.1%	5.9%	6.6%	6.1%	.0%	4.3%	6.7%	6.5%	6.6%
SUBCONT INDIAN	23	16	39	33	18	51	63	15	78
Row Percent	59.0%	41.0%	100.0%	64.7%	35.3%	100.0%	80.8%	19.2%	100.0%
Column Percent	18.1%	15.8%	17.1%	50.0%	64.3%	54.3%	52.5%	48.4%	51.7%
OTHER ASIAN	37	26	63	11	7	18	29	7	36
Row Percent	58.7%	41.3%	100.0%	61.1%	38.9%	100.0%	80.6%	19.4%	100.0%
Column Percent	29.1%	25.7%	27.6%	16.7%	25.0%	19.1%	24.2%	22.6%	23.8%
BLACK	21	28	49	9	0	9	6	1	7
Row Percent	42.9%	57.1%	100.0%	100.0%	.0%	100.0%	85.7%	14.3%	100.0%
Column Percent	16.5%	27.7%	21.5%	13.6%	.0%	9.6%	5.0%	3.2%	4.6%
HISPANIC	24	13	37	7	2	9	9	5	14
Row Percent	64.9%	35.1%	100.0%	77.8%	22.2%	100.0%	64.3%	35.7%	100.0%
Column Percent	18.9%	12.9%	16.2%	10.6%	7.1%	9.6%	7.5%	16.1%	9.3%
OTHER	9	7	16	1	1	2	5	1	6
Row Percent	56.3%	43.8%	100.0%	50.0%	50.0%	100.0%	83.3%	16.7%	100.0%
Column Percent	7.1%	6.9%	7.0%	1.5%	3.6%	2.1%	4.2%	3.2%	4.0%
TOTAL	127	101	228	66	28	94	120	31	151
Row Percent	55.7%	44.3%	100.0%	70.2%	29.8%	100.0%	79.5%	20.5%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table F-4

BS CHEMICAL ENGINEERING GRADUATES
by CITIZENSHIP and ETHNICITY
1989 Starting Salary Survey

	MINORITY CLASSIFICATION								TOTAL
	AMER INDIAN	CHINESE	SUBCONT INDIAN	OTHER ASIAN	BLACK	HISP	WHITE	OTHER	
CITIZENSHIP									
U.S. NATIVE	7	2	14	10	22	13	711	4	783
Row Percent	.9%	.3%	1.8%	1.3%	2.8%	1.7%	90.8%	.5%	100.0%
Column Percent	100.0%	40.0%	58.3%	33.3%	84.6%	68.4%	98.2%	50.0%	92.9%
U.S. NATURALIZED	0	1	5	14	2	3	4	1	30
Row Percent	.0%	3.3%	16.7%	46.7%	6.7%	10.0%	13.3%	3.3%	100.0%
Column Percent	.0%	20.0%	20.8%	46.7%	7.7%	15.8%	.6%	12.5%	3.6%
U.S. PERMANENT RESIDENT	0	2	4	1	1	3	5	1	17
Row Percent	.0%	11.8%	23.5%	5.9%	5.9%	17.6%	29.4%	5.9%	100.0%
Column Percent	.0%	40.0%	16.7%	3.3%	3.8%	15.8%	.7%	12.5%	2.0%
OTHER VISA	0	0	1	5	1	0	4	2	13
Row Percent	.0%	.0%	7.7%	38.5%	7.7%	.0%	30.8%	15.4%	100.0%
Column Percent	.0%	.0%	4.2%	16.7%	3.8%	.0%	.6%	25.0%	1.5%
TOTAL	7	5	24	30	26	19	724	8	843
Row Percent	.8%	.6%	2.8%	3.6%	3.1%	2.3%	85.9%	.9%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table F-4 Continued

MS CHEMICAL ENGINEERING GRADUATES
by CITIZENSHIP and ETHNICITY
1989 Starting Salary Survey

	MINORITY CLASSIFICATION								TOTAL
	AMER INDIAN	CHINESE	SUBCONT INDIAN	OTHER ASIAN	BLACK	HISP	WHITE	OTHER	
CITIZENSHIP									
U.S. NATIVE	1	0	0	1	0	3	152	1	158
Row Percent	.6%	.0%	.0%	.6%	.0%	1.9%	96.2%	.6%	100.0%
Column Percent	100.0%	.0%	.0%	5.3%	.0%	50.0%	91.0%	33.3%	69.3%
U.S. NATURALIZED	0	1	1	3	2	0	2	1	10
Row Percent	.0%	10.0%	10.0%	30.0%	20.0%	.0%	20.0%	10.0%	100.0%
Column Percent	.0%	6.7%	10.0%	15.8%	28.6%	.0%	1.2%	33.3%	4.4%
U.S. PERMANENT RESIDENT	0	0	0	2	3	3	4	0	12
Row Percent	.0%	.0%	.0%	16.7%	25.0%	25.0%	33.3%	.0%	100.0%
Column Percent	.0%	.0%	.0%	10.5%	42.9%	50.0%	2.4%	.0%	5.3%
OTHER VISA	0	14	9	13	2	0	9	1	48
Row Percent	.0%	29.2%	18.8%	27.1%	4.2%	.0%	18.8%	2.1%	100.0%
Column Percent	.0%	93.3%	90.0%	68.4%	28.6%	.0%	5.4%	33.3%	21.1%
TOTAL	1	15	10	19	7	6	167	3	228
Row Percent	.4%	6.6%	4.4%	8.3%	3.1%	2.6%	73.2%	1.3%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table F-4 Continued

PHD CHEMICAL ENGINEERING GRADUATES
by CITIZENSHIP and ETHNICITY
1989 Starting Salary Survey

	MINORITY CLASSIFICATION								TOTAL
	AMER INDIAN	CHINESE	SUBCONT INDIAN	OTHER ASIAN	BLACK	HISP	WHITE	OTHER	
CITIZENSHIP									
U.S. NATIVE	0	0	3	3	0	0	108	1	115
Row Percent	.0%	.0%	2.6%	2.6%	.0%	.0%	93.9%	.9%	100.0%
Column Percent	.0%	.0%	16.7%	33.3%	.0%	.0%	87.1%	100.0%	67.6%
U.S. NATURALIZED	0	1	2	0	0	1	1	0	5
Row Percent	.0%	20.0%	40.0%	.0%	.0%	20.0%	20.0%	.0%	100.0%
Column Percent	.0%	6.7%	11.1%	.0%	.0%	50.0%	.8%	.0%	2.9%
U.S. PERMANENT RESIDENT	0	4	3	1	0	1	4	0	13
Row Percent	.0%	30.8%	23.1%	7.7%	.0%	7.7%	30.8%	.0%	100.0%
Column Percent	.0%	26.7%	16.7%	11.1%	.0%	50.0%	3.2%	.0%	7.6%
OTHER VISA	0	10	10	5	1	0	11	0	37
Row Percent	.0%	27.0%	27.0%	13.5%	2.7%	.0%	29.7%	.0%	100.0%
Column Percent	.0%	66.7%	55.6%	55.6%	100.0%	.0%	8.9%	.0%	21.8%
TOTAL	0	15	18	9	1	2	124	1	170
Row Percent	.0%	8.8%	10.6%	5.3%	.6%	1.2%	72.9%	.6%	100.0%
Column Percent	.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table F-5

CHEMICAL ENGINEERING GRADUATES
by CITIZENSHIP, SEX, and DEGREE
1989 Starting Salary Survey

	BS			MS			PHD		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
CITIZENSHIP									
U.S. NATIVE	525	263	788	111	46	157	100	17	117
Row Percent	66.6%	33.4%	100.0%	70.7%	29.3%	100.0%	85.5%	14.5%	100.0%
Column Percent	92.6%	93.6%	92.9%	64.2%	83.6%	68.9%	67.1%	73.9%	68.0%
U.S. NATURALIZED	20	10	30	8	2	10	4	1	5
Row Percent	66.7%	33.3%	100.0%	80.0%	20.0%	100.0%	80.0%	20.0%	100.0%
Column Percent	3.5%	3.6%	3.5%	4.6%	3.6%	4.4%	2.7%	4.3%	2.9%
U.S. PERMANENT RESIDENT	12	5	17	8	4	12	12	1	13
Row Percent	70.6%	29.4%	100.0%	66.7%	33.3%	100.0%	92.3%	7.7%	100.0%
Column Percent	2.1%	1.8%	2.0%	4.6%	7.3%	5.3%	8.1%	4.3%	7.6%
OTHER VISA	10	3	13	46	3	49	33	4	37
Row Percent	76.9%	23.1%	100.0%	93.9%	6.1%	100.0%	89.2%	10.8%	100.0%
Column Percent	1.8%	1.1%	1.5%	26.6%	5.5%	21.5%	22.1%	17.4%	21.5%
TOTAL	567	281	848	173	55	228	149	23	172
Row Percent	66.9%	33.1%	100.0%	75.9%	24.1%	100.0%	86.6%	13.4%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table F-6

MINORITY CHEMICAL ENGINEERING GRADUATES
by MINORITY CLASSIFICATION, SEX, AND DEGREE
1989 Starting Salary Survey

	BS			MS			PHD		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
RACE OR ETHNIC GROUP									
AMER INDIAN	2	5	7	0	1	1	0	0	0
Row Percent	28.6%	71.4%	100.0%	.0%	100.0%	100.0%	.0%	.0%	.0%
Column Percent	3.2%	8.9%	5.9%	.0%	9.1%	1.6%	.0%	.0%	.0%
CHINESE	2	3	5	15	0	15	15	0	15
Row Percent	40.0%	60.0%	100.0%	100.0%	.0%	100.0%	100.0%	.0%	100.0%
Column Percent	3.2%	5.4%	4.2%	30.0%	.0%	24.6%	37.5%	.0%	32.6%
SUBCONT INDIAN	9	15	24	9	1	10	16	2	18
Row Percent	37.5%	62.5%	100.0%	90.0%	10.0%	100.0%	88.9%	11.1%	100.0%
Column Percent	14.3%	26.8%	20.2%	18.0%	9.1%	16.4%	40.0%	33.3%	39.1%
OTHER ASIAN	20	10	30	17	2	19	6	3	9
Row Percent	66.7%	33.3%	100.0%	89.5%	10.5%	100.0%	66.7%	33.3%	100.0%
Column Percent	31.7%	17.9%	25.2%	34.0%	18.2%	31.1%	15.0%	50.0%	19.6%
BLACK	13	13	26	6	1	7	1	0	1
Row Percent	50.0%	50.0%	100.0%	85.7%	14.3%	100.0%	100.0%	.0%	100.0%
Column Percent	20.6%	23.2%	21.8%	12.0%	9.1%	11.5%	2.5%	.0%	2.2%
HISPANIC	10	9	19	1	5	6	1	1	2
Row Percent	52.6%	47.4%	100.0%	16.7%	83.3%	100.0%	50.0%	50.0%	100.0%
Column Percent	15.9%	16.1%	16.0%	2.0%	45.5%	9.8%	2.5%	16.7%	4.3%
OTHER	7	1	8	2	1	3	1	0	1
Row Percent	87.5%	12.5%	100.0%	66.7%	33.3%	100.0%	100.0%	.0%	100.0%
Column Percent	11.1%	1.8%	6.7%	4.0%	9.1%	4.9%	2.5%	.0%	2.2%
TOTAL	63	56	119	50	11	61	40	6	46
Row Percent	52.9%	47.1%	100.0%	82.0%	18.0%	100.0%	87.0%	13.0%	100.0%
Column Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

American Chemical Society

1155 SIXTEENTH STREET, N.W.
WASHINGTON, D.C. 20036
Phone (202) 872-4534

JOHN K CRUM
Executive Director

Summer 1989

Dear Colleague:

Every year, the American Chemical Society conducts a mail survey of persons who have recently earned degrees in chemistry or chemical engineering. Published results, which include information about salaries and employment, are useful to the profession, and especially to those beginning their careers.

I urge you, as a service to your colleagues and profession, to respond to this year's questionnaire. The procedure is confidential. The information you provide will be combined with returns from other graduates so that only aggregated data will be available. To ensure confidentiality, your name and address will not be coded with the information you provide.

Please complete this questionnaire and return it promptly. For your convenience, I have enclosed a self-addressed, postage-paid envelope. Results of the survey will be published in the CHEMICAL AND ENGINEERING NEWS' Career Issue this October and in a more extensive report later in the year.

Thank you for your assistance with this survey. I extend my best wishes for every success in your professional pursuits.

Sincerely,

John K Crum

John K Crum

Enclosure

AMERICAN CHEMICAL SOCIETY

Survey of Starting Salaries and Employment Status of 1989 Chemistry and Chemical Engineering Graduates

1. Highest degree earned:

- Bachelor's ☐ 1
- Master's ☐ 2
- Doctorate ☐ 3

2. Field of highest degree:

- Chemical engineering ☐ 01
- Biochemical engineering ☐ 02
- Biochemistry ☐ 03
- Analytical chemistry ☐ 04
- Inorganic chemistry ☐ 05
- Organic chemistry ☐ 06
- Physical chemistry ☐ 07
- Polymer chemistry ☐ 08
- Other chemistry ☐ 09
- Other (please specify) _____ ☐ 10

3. Grade point average:
[Use A = 4.00; B = 3.00; C = 2.00]

In your major _____

Overall _____

4. Please describe the school that granted your degree:

a. Public ☐ 1
Private ☐ 2

b. Total number of students:
- Less than 1,500 ☐ 1
- 1,500 to 4,999 ☐ 2
- 5,000 to 9,999 ☐ 3
- 10,000 to 19,999 ☐ 4
- 20,000 or more ☐ 5

c. The highest degree offered by your department is:
- BS ☐ 1
- MS ☐ 2
- PhD ☐ 3

d. Location of school. Please give first three digits of zip code:

— — —

e. Is the school an historically or predominantly black institution?
- Yes ☐ 1
- No ☐ 2

f. Is the school a traditionally women's institution?
- Yes ☐ 1
- No ☐ 2

5. How would you rate the state of equipment in your chemistry or chemical engineering classes?

a. The type of equipment was:
- Excellent ☐ 1
- Adequate ☐ 2
- Inadequate ☐ 3

b. The access to equipment was:
- Excellent ☐ 1
- Adequate ☐ 2
- Inadequate ☐ 3

c. How up-to-date was the equipment?
- Extremely ☐ 1
- Moderately ☐ 2
- Not at all ☐ 3

6. In your chemistry classes, did you get a chance to:

a. Work in teams?
- Yes ☐ 1
- No ☐ 2

b. Work on independent research projects?
- Yes ☐ 1
- No ☐ 2

7. Will you pursue advanced studies in the fall of 1989?

- Yes, full-time ☐ 1
- Yes, part-time ☐ 2
- No ☐ 3

a. If yes, field of further studies:
- Chemistry ☐ 01
- Other physical science or mathematics ☐ 02
- Chemical engineering or biochemical engineering ☐ 03
- Other engineering ☐ 04
- Biochemistry ☐ 05
- Life science ☐ 06
- Medicine ☐ 07
- Dentistry ☐ 08
- Pharmacy, pharmacology ☐ 09
- Business management ☐ 10
- Education ☐ 11
- Law ☐ 12
- Other (please specify) _____ ☐ 13

8. Age at last birthday? __ __ years old

9. Sex:

- Male ☐ 1
- Female ☐ 2

10. Citizenship or visa status:

- U.S. native ☐ 1
- U.S. naturalized ☐ 2
- U.S. permanent resident visa ☐ 3
- Other visa ☐ 4

11. Race or ethnic group:

- American Indian or Alaskan Native ☐ 1
- Subcontinental Indian ☐ 2
- Chinese ☐ 3
- Other Asian or Pacific Islander ☐ 4
- Black (not of Hispanic origin) ☐ 5
- Hispanic ☐ 6
- White (not of Hispanic origin) ☐ 7
- Other race or ethnic group ☐ 8

12. Current employment status:

- Accepted or continuing full-time employment (excluding summer employment) ☐ 1
- Accepted a graduate assistantship, fellowship or postdoctoral fellowship ☐ 2
- Part-time employment ☐ 3
- Temporary/summer employment ☐ 4
- Not employed ☐ 5

a. If not continuing full-time employment, are you:
- *seeking* full-time, year-round employment ☐ 1
- *not seeking* full-time, year-round employment ☐ 2

IF YOU CHECKED BOX 3,4, OR 5 IN QUESTION 12 ABOVE, PLEASE STOP HERE AND RETURN THE QUESTIONNAIRE IN THE ENVELOPE PROVIDED

13. Your base annual salary from principal job:

$ _____ per year

IF YOU HOLD AN ASSISTANTSHIP OR FELLOWSHIP, PLEASE STOP HERE AND RETURN THE QUESTIONNAIRE IN THE ENVELOPE PROVIDED.

14. How many firm offers of employment did you receive in a field of chemistry or chemical engineering?

Specify number _____

15. Professional or technical work experience prior to graduation

- Less than 12 months (or none) ☐ 1
- 12 to 36 months ☐ 2
- More than 36 months ☐ 3

16. Check the one specialty most related to your job:

- Chemical engineering ☐ 1
- Chemistry (including biochemistry) ☐ 2
- Other ☐ 3

17. Check the one category that best describes your employer:

- Private industry ☐ 1
- College or university ☐ 2
- High school or other school ☐ 3
- Federal government (civilian) ☐ 4
- Military ☐ 5
- State or local government ☐ 6
- Hospital or independent laboratory ☐ 7
- Other (please specify) _____ ☐ 8

18. Check the one work function that best describes your job:

- Teaching ☐ 1
- Management or administration ☐ 2
- Basic research ☐ 3
- Applied research/Development/Design ☐ 4
- Production/Quality control ☐ 5
- Other (please specify) _____ ☐ 6

a. Is your job classified as a technician position?

- Yes ☐ 1
- No ☐ 2

19. Employer's approximate number of employees (total for the whole organization, all locations):

- Less than 500 ☐ 1
- 500 to 2,499 ☐ 2
- 2,500 to 9,999 ☐ 3
- 10,000 to 24,999 ☐ 4
- 24,000 or more ☐ 5

20. Geographic location of employment: Please give first three digits of zip code.

— — —

Comments:

THANK YOU FOR YOUR PARTICIPATION

PLEASE RETURN THIS QUESTIONNAIRE PROMPTLY TO

ACS STARTING SALARY SURVEY
ROOM 610, 1155 16th Street NW, Washington, DC 20036

ACS MEMBER SERVICES PUBLICATIONS

Salaries: The Society annually surveys the ACS membership, gathering detailed information on member chemists and chemical engineers. The reports based on this survey contain statistical tables describing the respondents' employment status, employer, work function and specialty, salaries, and demographic characteristics.

Reports are available for each year from 1973 through the current year. For 1987, four separate reports are available: *1987 Salaries of Non-Academic Chemists, 1987 Salaries of Non-Academic Chemical Engineers, 1987 Salaries of Academic Chemists,* and *1987 Employment Status and Demographic Characteristics of ACS Members.*

Starting Salaries: The Society also surveys new graduates in chemistry and chemical engineering each summer, and publishes reports detailing the graduates' employment status, post-graduation plans, starting salaries, and other employment and demographic characteristics.

Reports are available for each year from 1975 through the current year.

Professionals in Chemistry: The *Professionals in Chemistry* series compiles information concerning chemists and chemical engineers from ACS, government, and private industry sources. It details information on demography, employment, salaries, education, and supply and demand for the entire chemical profession.

Reports are available for each year from 1975 through 1978, and combined reports for 1979-1980, 1981-82, 1983-84, and 1985-86.

Special Reports:

1975 Report of Chemists' Salaries and Employment Status Supplement: Economic Status of Women in the ACS.

Women Chemists 1980: A supplemental report on the ACS's 1980 Survey of Salaries and Employment.

Women Chemists 1985: A supplemental report on the ACS's 1985 Survey of Salaries and Employment.

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